VI.D. Claim 37 in view of the Deaton '010 Patent

Claim 37, element a – language

- "[A method as recited in claim 20, further comprising the steps of:] inferring occurrence of an event while converting a lead to a buying customer; and"

Claim 37, element a – construction

- "inferring" – "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring occurrence of an event" – "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 37, element a – analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 20 chart incorporated by reference]

Col. 4 lines 12-19: "The system includes one or more transaction terminals, coupled to a transaction processor that stores the customer database. A transaction terminal is used to transmit a customer information request (such as for check transaction verification), which includes an automatically read customer's check identification number, from the point of sale (POS) to the transaction processor."

Col. 67 line 59 – Col. 68 line 12. "FIG. 17 illustrates a program flow chart of a marketing technique utilizing the present invention, wherein coupons may be distributed to customers based upon the frequency of shopping, dollar volume or other criteria based upon the shopping habits of the customer. ... The technique shown in FIG. 17 enables the stores to issue coupons and other inducements to customers based upon the shopping habits of the customer. For example, the technique shown in FIG. 17 enables the store to reward a high volume shopper in order to hold on to especially good shoppers. Alternatively, the store can award a lesser incentive package to good shoppers in order to maintain a consistency such that each shopper receives a coupon package. Importantly, the technique enables a high incentive coupon pack to be delivered to a customer who is a secondary shopper or who is an infrequent shopper, in order to make them a primary shopper."

241

Col. 70 line 50 – Col. 71 line 21: "FIG. 18A-C illustrates a technique for generating coupons based upon the particular transaction currently being accomplished by the customer. The technique of FIG. 18 detects the particular store departments in which the products being purchased are located. ... For example, the technique shown in FIG. III detects whether or not items have been purchased from the meat department, dairy department or deli. Based upon data stored within the computer, the decision is then made as to whether to award a coupon and what type of coupon to award. For example, if the data illustrates that over a period of time a shopper shows a consistent failure to shop at the delicatessen, then when the customer's check identification is scanned into the check reader 119, the processor 110 pulls up the customer's history and generates a coupon to induce the customer to shop at the delicatessen the next time the customer shops. This inducing can be done by providing the customer with a very high value coupon used only for deli shopping.

Similarly, the stored data in processor 110 may contain information regarding particular product groups. If it is determined that the customer is a frequent shopper but does not purchase coffee, the data may determine that a coupon providing a large discount on coffee would be suitable to give to the customer. Alternatively, the system might determine that the customer had no history of buying a specific brand of coffee, and incentive coupons can be distributed for that brand of coffee."

Claim 37, element a - my analysis of the Deaton '010 Patent

See claim elements missing from Claim 20.

See discussion for Claims 34a which is incorporated herein by reference.

Claim 37, element b - language

- "using the particular subsystem to assist a sales manager in managing a plurality of salespeople."

Claim 37, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 37, element b - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

242

Col. 5 line 48-55. An Event Manager Task that implements system activities such as backup and database purge, and in the case of multiple-store systems, implements host/remote communications activities to transfer selected customer information among the stores for updating each store's local customer database with the selected global customer information.

Col. 6 lines 25-33. For multiple-store businesses, the system can use automatic host/remote transfer of selected customer information to upgrade the local customer database at each store with global customer information (such as those customers with CAUTION and NEGATIVE check verification status), thereby maximizing protection against bad checks while maintaining the local character of the store's customer database.

Col. 33, lines 55-59. The check transaction processing system allows a store to build and maintain a customer database containing customer information useful for identifying new customers and developing customer profiles;

Claim 37, element b - my analysis of the Deaton '010 Patent

See claim elements missing from Claim 20.

The Deaton '010 Patent does not perform "using the particular subsystem to assist a sales manager in managing a plurality of salespeople."   See discussion for Claim 10b which is incorporated herein by reference.

VI.D. Claim 40 in view of the Deaton '010 Patent

Claim 40, preamble - language

- "A computer implemented sales system used to facilitate a sales process, the system comprising:"

Claim 40, preamble - construction

The Court has not construed this preamble. My analysis construes the terms of this preamble in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, preamble - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this preamble is as follows:

> The preamble is not a limitation, nonetheless abstract: "A method and system is disclosed for performing targeted marking on infrequent shoppers."

> Col. 3 lines 50-60: "Important aspects of the present invention are to facilitate check transactions by reducing the requirements for customer identification, to enable a store to adopt a risk management approach to check verification based on a customer's transactional history (frequency and dollar volume over specified intervals), and to improve a store's marketing and other customer relations programs by collecting transactional data for that store, both current and historical, that can be used to identify new or infrequent customers, develop customer profiles and to perform targeted marketing."

> Col. 9, lines 9-14: "A transaction terminal transmits a request (including a function code identifying the requested function together with other request data) to the transaction processor, which processes the request and returns an appropriate response."

Claim 40, preamble - my analysis of the Deaton '010 Patent

My analysis of this preamble is the same as my analysis for Claim 1, preamble.

Claim 40, element a - language

- "a plurality of subsystems configured to electronically facilitate actions performed during the sales process; and"

Claim 40, element a - construction

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element a - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 4 lines 12-19: "The system includes one or more transaction terminals, coupled to a transaction processor that stores the customer database. A transaction terminal is used to transmit a customer information request (such as for check transaction verification),

244

which includes an automatically read customer's check identification number, from the point of sale (POS) to the transaction processor."

Claim 40, element a - my analysis of the Deaton '010 Patent

My analysis of this element is the same as my analysis for Claim 1, element a.

Claim 40, element b - language

- "an event manager coupled to the subsystems and configured to detect one or more changes in state characteristic of an event occurring in the system,"

Claim 40, element b - construction

- "Event manager" - "hardware and/or software";

- "Subsystem" - "a system that is part of a larger system";

- "Changes in state characteristic of an event" - "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system.

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element b - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 4 lines 12-28: "The system includes one or more transaction terminals, coupled to a transaction processor that stores the customer database. A transaction terminal is used to transmit a customer information request (such as for check transaction verification), which includes an automatically read customer's check identification number, from the point of sale (POS) to the transaction processor. The transaction processor processes the customer information request, using the check identification number to search the customer database and retrieve the corresponding customer record, if any. Based on the customer information in the customer record, or the lack of a customer record, the transaction processor returns an appropriate response (such as check verification status) and marketing response information to the transaction terminal."

> Col. 9 lines 15-21: "For example, in the case of check verification, a transaction terminal is used to transmit a verification request-the customer's check ID, the verification function code, and the dollar amount. The transaction processor processes the request,

245

updates the customer database to reflect that transaction, and returns a customer verification status response."

Col. 31 lines 52-56: "Event-driven activities are performed automatically by the check transaction processing system to implement certain functions without operator intervention. The configuration and timing of these activities is a matter of routine design selection." "Moreover, because the check transactional data is generated and maintained locally, it provides significant information about the store's customers over and above the information necessary for check verification risk management. New customers are readily identified, and frequency and dollar volume information may be used to establish customer profiles and to target advertising, marketing and promotional programs, and for other customer relations purposes."

Col. 6, lines 10-24: "In addition to check verification status, the system collects and accumulates selected additional transactional data, including frequency and dollar amounts over specified intervals (such as Day/Week/Month/Quarter/Total) and other historical information such as departments shopped, products purchased and the like, thus allowing the store to adopt risk management approach to check verification tailored to the store's particular customer and financial situation by conditioning check authorization on meeting certain selected transactional limits regardless of customer status (the CALL MANAGER response), and allowing the store to develop customer profiles and to target advertising, marketing and promotions, and otherwise improve customer relations."

Col. 65 line 59 – Col. 66 line 12: "The checking account identification number is entered into processor 110 which contain a database that maintains customer records including the customer's name and address, the checking account identification number, and customer shopping habits and transactional data over a preselected time interval. The checking account identification number is compared with the database. A response is generated by the processor 110 to signal the presence of the customer's checking account identification number or the failure to locate the customer's checking account identification number. A new record is then created in the database for that customer's checking account identification number in response to a processor 110 response indicating the failure to locate, so that the customer's name and address is entered into the record along with a shopping incidence and shopping data being recorded in the database concurrently. A list of customers is then generated in the database whose last transaction date is prior to a preselected interval of inactivity so that grouping or subgrouping of customers is available for marketing efforts."
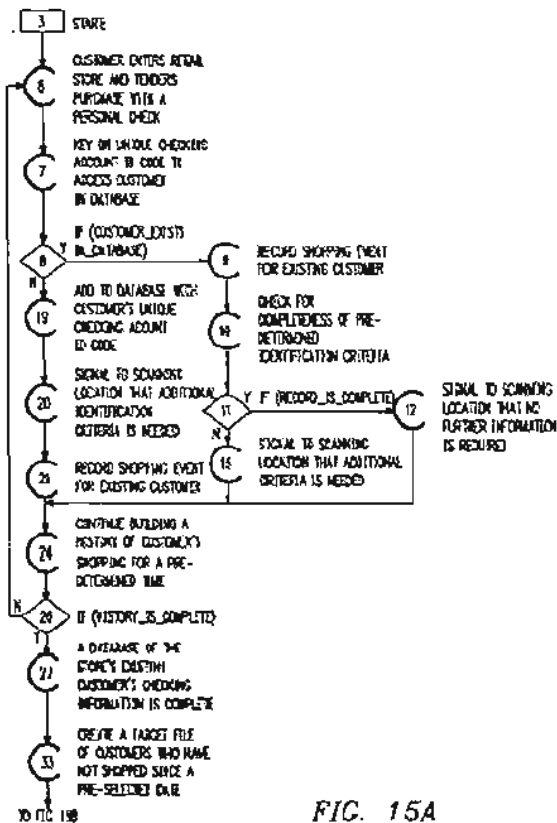
Col. 66 lines 13-19: "Alternatively, the system may use dollar amounts to determine an "infrequent shopper". If the system determines that the cumulative dollars spent at the store by a specified customer is equal to or less than a predetermined dollar level within a predetermined time interval, the specified customer is designated as an "infrequent shopper"."

Col. 66 lines 20-30: "As another alternative, the database is maintained with the shopping history for each unique check identification. Each time the system detects a check with a unique check identification number, it is checked against the database. If the

246

last date shopped is prior to a preselected date, a signal is generated and transmitted to the POS. The check is then marked or set aside to be used to create a mailing list. Alternatively, the signal may be used to prompt the store clerk to disburse incentive coupons at the POS."

Col. 66, lines 32-38: "5.4. Marketing Based On Range Of Last Shopping Dates

As noted above, it would be advantageous to be able to selectively market to infrequent shoppers. FIG. 15 illustrated a database building technique to obtain a list of infrequent shoppers based upon their last shopping date.
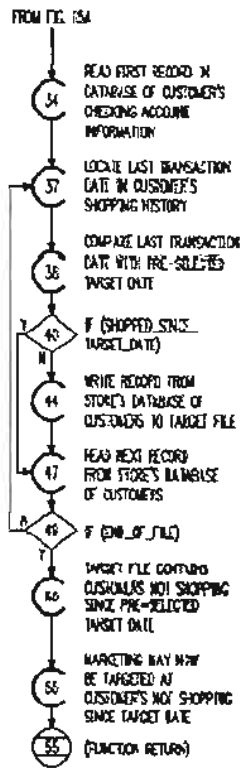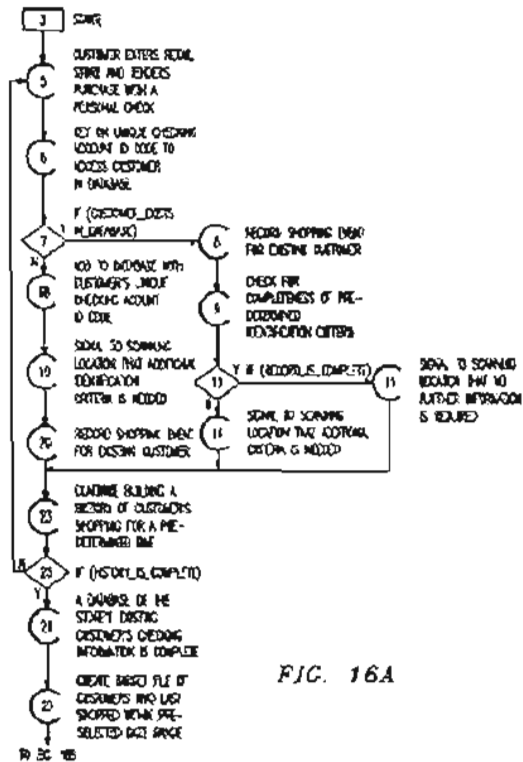

FIG. 15A

FIG. 15B

Col. 66, lines 32-38: "FIG. 16 illustrates a database building technique to provide a list of a store's customers whose last shopping date falls within a preselected shopping date range. ...

In accordance with the techniques shown in FIG. 16, a customer's checking account identification number is entered as a unique customer identification code by the check reader 119. Host processor 110 is programmed to store a database which includes a plurality of unique customer identification codes and check cashing history of prior customers of the retail establishment, including date of check transactions. The processor then compares each newly entered unique customer identification code against the stored database. A signal is generated to indicate the presence of a complete customer information record or of an incomplete customer information record as a result of the comparison. A second database is then generated which lists customers whose last unique customer identification code entry date falls within a preselected date range. A promotion may then be selectively offered by the retail establishment to customers within the second database. For example, coupons or other enticements may be mailed directly to the customers on the second database, or distributed at the POS."

248

FIG. 16A

FIG. 16B

Claim 40, element b - my analysis of the Deaton '010 Patent

My analysis of this element is the same as my analysis for Claim 1, element b.

Claim 40, element c - language

- "Infer occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state,"

Claim 40, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element c - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 5, lines 19-27: "Moreover, because the check transactional data is generated and maintained locally, it provides significant information about the store's customers over and above the information necessary for check verification risk management. New customers are readily identified, and frequency and dollar volume information may be used to establish customer profiles and to target advertising, marketing and promotional programs, and for other customer relations purposes."

> Col. 6, lines 10-24: "In addition to check verification status, the system collects and accumulates selected additional transactional data, including frequency and dollar amounts over specified intervals (such as Day/Week/Month/Quarter/Total) and other historical information such as departments shopped, products purchased and the like, thus allowing the store to adopt risk management approach to check verification tailored to the store's particular customer and financial situation by conditioning check authorization on

250

meeting certain selected transactional limits regardless of customer status (the CALL MANAGER response), and allowing the store to develop customer profiles and to target advertising, marketing and promotions, and otherwise improve customer relations."

Col. 65 line 59 – Col. 66 line 12: "The checking account identification number is entered into processor 110 which contain a database that maintains customer records including the customer's name and address, the checking account identification number, and customer shopping habits and transactional data over a preselected time interval. The checking account identification number is compared with the database. A response is generated by the processor 110 to signal the presence of the customer's checking account identification number or the failure to locate the customer's checking account identification number. A new record is then created in the database for that customer's checking account identification number in response to a processor 110 response indicating the failure to locate, so that the customer's name and address is entered into the record along with a shopping incidence and shopping data being recorded in the database concurrently. A list of customers is then generated in the database whose last transaction date is prior to a preselected interval of inactivity so that grouping or subgrouping of customers is available for marketing efforts."

Col. 66 lines 13-19:   "Alternatively, the system may use dollar amounts to determine an "infrequent shopper". If the system determines that the cumulative dollars spent at the store by a specified customer is equal to or less than a predetermined dollar level within a predetermined time interval, the specified customer is designated as an "infrequent shopper"."

Col. 66 lines 20-30: "As another alternative, the database is maintained with the shopping history for each unique check identification. Each time the system detects a check with a unique check identification number, it is checked against the database. If the last date shopped is prior to a preselected date, a signal is generated and transmitted to the POS. The check is then marked or set aside to be used to create a mailing list. Alternatively, the signal may be used to prompt the store clerk to disburse incentive coupons at the POS."

Col. 66, lines 32-38: "5.4. Marketing Based On Range Of Last Shopping Dates

As noted above, it would be advantageous to be able to selectively market to infrequent shoppers. FIG. 15 illustrated a database building technique to obtain a list of infrequent shoppers based upon their last shopping date.
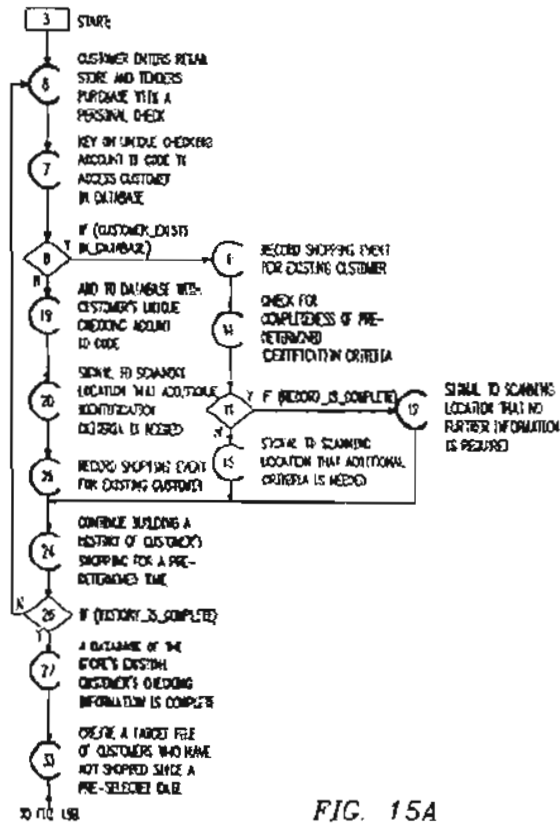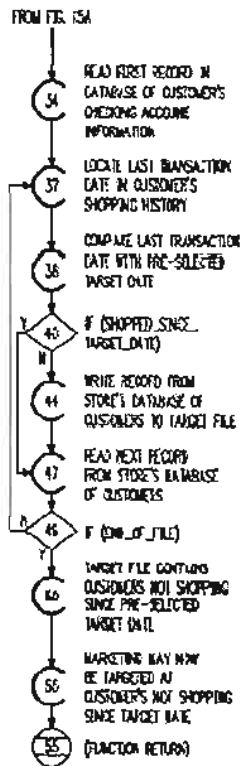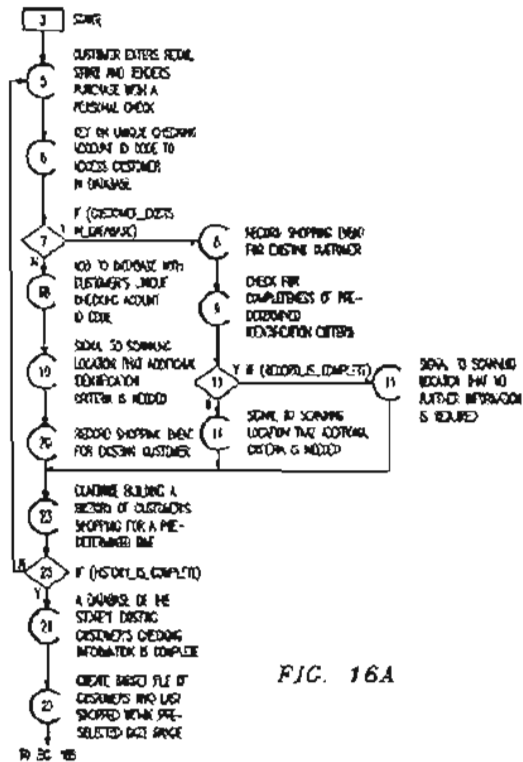
FIG. 15A

FIG. 16B

Col. 66, lines 32-38: "FIG. 16 illustrates a database building technique to provide a list of a store's customers whose last shopping date falls within a preselected shopping date range... In accordance with the techniques shown in FIG. 16, a customer's checking account identification number is entered as a unique customer identification code by the check reader 119. Host processor 110 is programmed to store a database which includes a plurality of unique customer identification codes and check cashing history of prior customers of the retail establishment, including date of check transactions. The processor then compares each newly entered unique customer identification code against the stored database. A signal is generated to indicate the presence of a complete customer information record or of an incomplete customer information record as a result of the comparison. A second database is then generated which lists customers whose last unique customer identification code entry date falls within a preselected date range. A promotion may then be selectively offered by the retail establishment to customers within the second database. For example, coupons or other enticements may be mailed directly to the customers on the second database, or distributed at the POS."

FIG. 16A

FIG. 16B

Claim 40, element c - my analysis of the Deaton '010 Patent

My analysis of this element is the same as my analysis for Claim 1, element c.

Claim 40, element d - language

- "Link the inferred event with an action to be performed during the sales process based on prior sales experience using the sales system, and"

Claim 40, element d - construction

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element d - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 66 lines 6 - 12: "A list of customers is then generated in the database whose last transaction date is prior to a preselected interval of inactivity so that grouping or subgrouping of customers is available for marketing efforts."

> Col. 66 lines 13-19: "Alternatively, the system may use dollar amounts to determine an "infrequent shopper". If the system determines that the cumulative dollars spent at the store by a specified customer is equal to or less than a predetermined dollar level within a predetermined time interval, the specified customer is designated as an "infrequent shopper"."

> Col. 66 lines 20-30: "As another alternative, the database is maintained with the shopping history for each unique check identification. Each time the system detects a check with a unique check identification number, it is checked against the database. If the last date shopped is prior to a preselected date, a signal is generated and transmitted to the POS. The check is then marked or set aside to be used to create a mailing list. Alternatively, the signal may be used to prompt the store clerk to disburse incentive coupons at the POS."

> Col. 66, lines 32-38: "5.4. Marketing Based On Range Of Last Shopping Dates

> As noted above, it would be advantageous to be able to selectively market to infrequent shoppers. FIG. 15 illustrated a database building technique to obtain a list of infrequent shoppers based upon their last shopping date.

255

Col. 66, lines 32-38: "FIG. 16 illustrates a database building technique to provide a list of a store's customers whose last shopping date falls within a preselected shopping date range... In accordance with the techniques shown in FIG. 16, a customer's checking account identification number is entered as a unique customer identification code by the check reader 119. Host processor 110 is programmed to store a database which includes a plurality of unique customer identification codes and check cashing history of prior customers of the retail establishment, including date of check transactions. The processor then compares each newly entered unique customer identification code against the stored database. A signal is generated to indicate the presence of a complete customer information record or of an incomplete customer information record as a result of the comparison. A second database is then generated which lists customers whose last unique customer identification code entry date falls within a preselected date range. A promotion may then be selectively offered by the retail establishment to customers within the second database. For example, coupons or other enticements may be mailed directly to the customers on the second database, or distributed at the POS."

Claim 40, element d - my analysis of the Deaton '010 Patent

The Deaton '010 Patent does not perform Claim 40, element d: "Link the inferred event with an action to be performed during the sales process based on prior sales experience using the sales system, and"

Neither the Deaton '010 Patent nor the Cook Report's analysis describe whether or how events are linked to actions. Neither describes whether or how the Deaton '010 Patent supports inferred events.

Claim 40, element e - language

- "Automatically initiate an operation using one or more of the plurality of subsystems to facilitate the action to be performed based on the inferred context."

Claim 40, element e - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

256

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element e - analysis by Dr. Cook of the Deaton '010 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 52 lines 31-39: "At the appropriate event time, the Event Manager Task spawns the event subtask, which receives (822) the current record from the Event Table. The current event record includes a current event time and an activity pointer to each of up to 10 associated activities identified in the Activity Table. The event subtask sequentially executes each activity associated with the current event time."
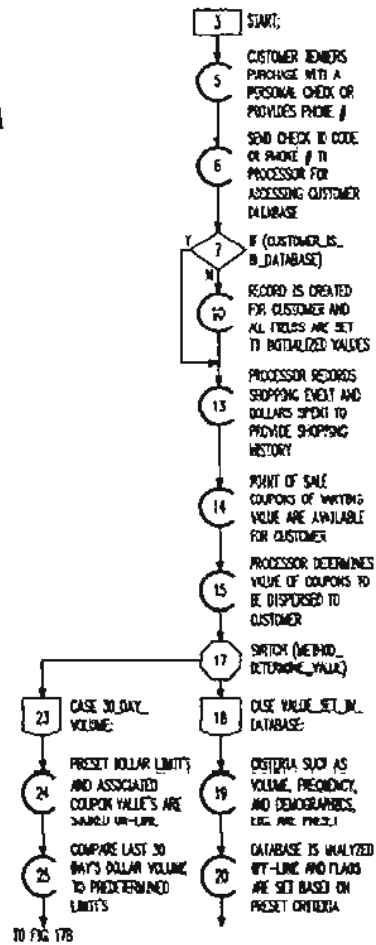
> Col. 52 lines 66-68: "For each activity code read from the Activity Table, the event subtask dispatches (830) to a corresponding activity routine for execution."

> Col. 67 line 59 – Col. 68 line 12: "FIG. 17 illustrates a program flow chart of a marketing technique utilizing the present invention, wherein coupons may be distributed to customers based upon the frequency of shopping, dollar volume or' other criteria based upon the shopping habits of the customer. ... The technique shown in FIG. 17 enables the stores to issue coupons and other inducements to customers based upon the shopping habits of the customer. For example, the technique shown in FIG. 17 enables the store to reward a high volume shopper in order to hold on to especially good shoppers. Alternatively, the store can award a lesser incentive package to good shoppers in order to maintain a consistency such that each shopper receives a coupon package. Importantly, the technique enables a high incentive coupon pack to be delivered to a customer who is a secondary shopper or who is an infrequent shopper, in order to make them a primary shopper."

> Col. 70 lines 13-16: "A ... technique of distributing coupons utilizes a system to actually print, at the point of sale, coupons bearing the desired information based upon selected criteria."

> Col. 70 lines 30-34. "[C]oupon dispensing apparatus ... may be utilized to print the coupons as described in FIG. 16A-B, ... based upon the criteria and the operation of the present invention.
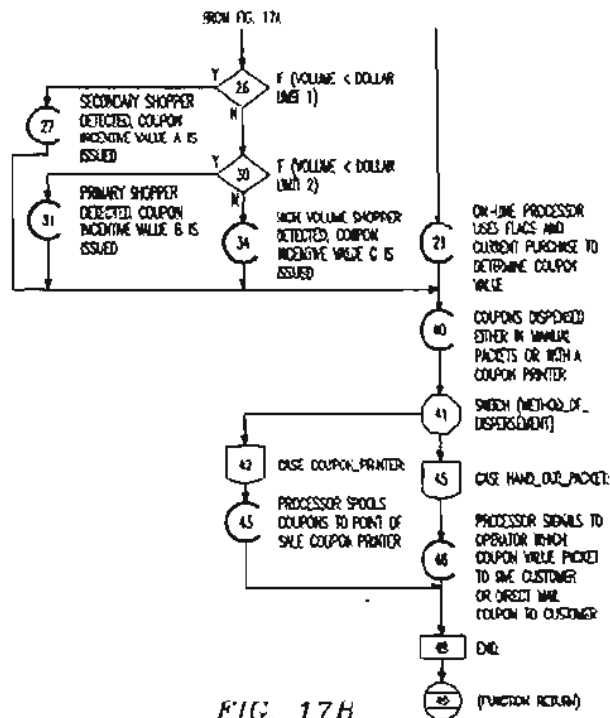
257

FIG. 17A

FIG. 17B

Col. 70 line 50 – Col. 71 line 21. "FIG. 18A-C illustrates a technique for generating coupons based upon the particular transaction currently being accomplished by the customer. The technique of FIG. 18 detects the particular store departments in which the products being purchased are located. ... For example, the technique shown in FIG. 18 detects whether or not items have been purchased from the meat department, dairy department or deli. Based upon data stored within the computer, the decision is then made as to whether to award a coupon and what type of coupon to award. For example, if the data illustrates that over a period of time a shopper shows a consistent failure to shop at the delicatessen, then when the customer's check identification is scanned into the check reader 119, the processor 110 pulls up the customer's history and generates a coupon to induce the customer to shop at the delicatessen the next time the customer shops. This inducing can be done by providing the customer with a very high value coupon used only for deli shopping. Similarly, the stored data in processor 110 may contain information regarding particular product groups. If it is determined that the customer is a frequent shopper but does not purchase coffee, the data may determine that a coupon providing a large discount on coffee would be suitable to give to the customer. Alternatively, the system might determine that the customer had no history of buying a specific brand of coffee, and incentive coupons can be distributed for that brand of coffee. To provide this information, information regarding the particular product and the department of the product is generated by the bar code reader 1130, or through entry through the cash register, and transmitted to the host processor 110. The host processor 110 then identifies each particular product being purchased, compares it against the stored data tables and generates an indication of the type of coupon to be given to the customer.

259

FIG. 18A

START;

CUSTOMER'S PURCHASE IS TRANSACTED WITH THE USE OF BAR CODE SCANNING REGISTER

ITEM IS SCANNED BY BAR CODE SCANNING REGISTER

CASH REGISTER MAINTAINS DEPARTMENT, PRODUCT, AND PRODUCT GROUP SHOPPED

IF (ALL_ITEMS_ARE SCANNED)

CUSTOMER TENDERS PURCHASE WITH A PERSONAL CHECK OR PROVIDES PHONE #

SEND CHECK ID CODE OR PHONE # TO PROCESSOR FOR ACCESSING CUSTOMER DATABASE

IF (CUSTOMER IS IN DATABASE)

RECORD IS CREATED FOR CUSTOMER AND ALL FIELDS ARE SET TO INITIALIZED VALUES

SEND INFORMATION ON SCANNED ITEMS TO PROCESSOR CONTAINING DATABASE

PROCESSOR RECORDS SHOPPING EVENT AND DOLLARS SPENT TO PROVIDE SHOPPING HISTORY

PROCESSOR UPDATES CUSTOMER'S RECORD WITH SCANNED ITEMS INFORMATION

POINT OF SALE COUPONS OF VARYING VALUE ARE AVAILABLE FOR CUSTOMER
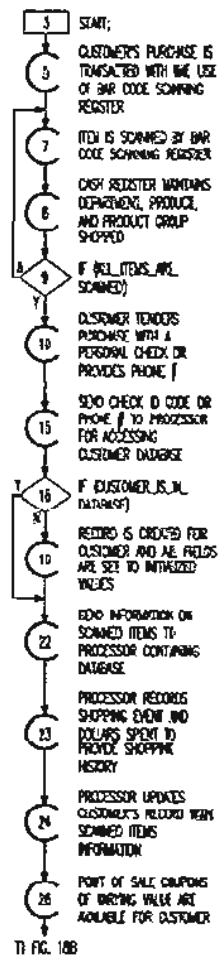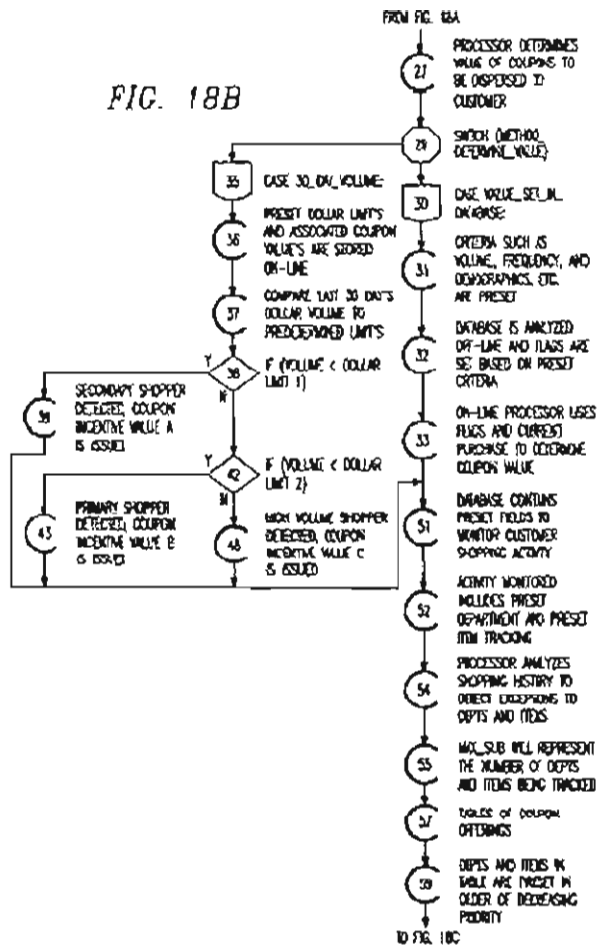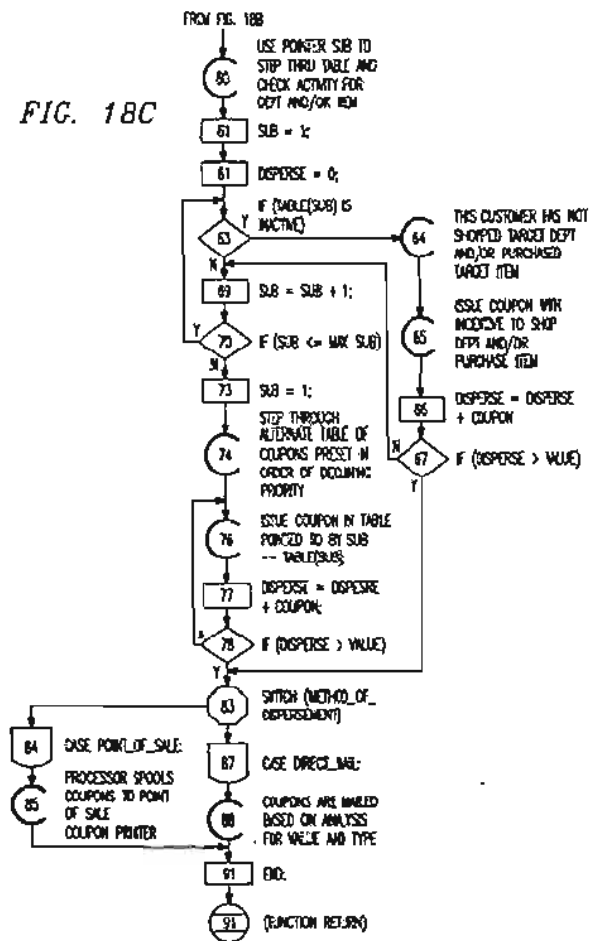
TO FIG. 18B

FIG. 18B

FIG. 18C

Claim 40, element e - my analysis of the Deaton '010 Patent

My analysis of this element is the same as my analysis for Claim 1, element d.

262

VI.E   U.S. PATENT NO. 5,774,868 TO CRAGUN (THE "CRAGUN '868 PATENT")

VI.E General Overview of the Cragun '868 Patent

Reference for the Cragun '868 Patent

- B. Cragun et al., "Automatic Sales Promotion Selection System and Method," US Patent 5,774,868, Filed: Dec. 23, 1994, Issued: Jun. 30, 1998

Claims at Issue

The Cook Report states that "Cragun U.S. Pat. No. 5,774,868 anticipates asserted Claims 1-3, 5-8, 10, 12, 20, 24, 34, 35, 37 and 40." (Cook Report, p200)

Dr. Cook's Summary of the Cragun '868 Patent (quoted from his Expert Report)

"156. This patent describes generally an automated sales promotion selection system having a computer system, including a main processor, acting as an event manager that is coupled to and communicates with one or more subsystems. Such systems include neural network subsystems (such as a purchase advisor), customer information devices, and billing terminals. All naturally facilitate one or more actions performed during the sales process.

"157. As items are purchased in a store, the recorded transaction information is detected by the processor as a change in state indicative of an event occurring within the system. The event is an inferred determination of the purchase class(es). After detecting a purchase transaction, the processor analyzes the collected purchase transaction information to segment the items purchased and infer purchase classes that comprise groups of items ordinarily purchased together.

"158. Upon the inference of purchase class(es), an operation is automatically initiated in the neural network subsystem(s) to identify items that are missing from the purchase transaction that are members of the respective inferred purchase class that otherwise would likely be represented in the purchase transaction. The missing items are identified relative to contexts derived as relevant upon the occurrence of an event. These contexts include the purchase transaction item information and the class definitions used to delineate the purchase class(es). A subsequent action based on the inferred context(s) would be a purchase suggestion for one or more of the missing items, and/or an automatically dispensed coupon, and/or another sales promotion dispensed by output device, such as a printer or display terminal.

"159. In this way, the sales promotion selection system automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction,

263

and uses neural networks to select a sales promotion calculated to result in additional purchases."

My Summary of the Cragun '868 Patent[7]

The Cragun '868 Patent relates to use of an algorithm in the form of a neural network that is used to select sales promotions. When a customer buys certain items, the system can identify additional items that other customers with similar buying profiles bought. The neural network is initially trained on previous purchasing data and initial positive and negative weights are assigned to neural net associative connections that are related to categories of goods that customers purchased together. Later, when the system is deployed, when a customer is making a purchase, the system uses the neural network to select other items that might be of interest and either a sales person can suggest these or a promotion or coupon can be generated.

Dr. Cook's Analysis of the Cragun '868 Patent from his Expert Report pp. 34-36 (quoted)

155.   I considered and analyzed U.S. Patent No. 5,774,868 ("the '868 Patent"). The '868 Patent was "known or used by others" in the United States prior to the October 30, 1994 critical date for the '525 Patent.

156.   This patent describes generally an automated sales promotion selection system having a computer system, including a main processor, acting as an event manager that is coupled to and communicates with one or more subsystems. Such systems include neural network subsystems (such as a purchase advisor), customer information devices, and billing terminals. All naturally facilitate one or more actions performed during the sales process.

157.   As items are purchased in a store, the recorded transaction information is detected by the processor as a change in state indicative of an event occurring within the system. The event is an inferred determination of the purchase class(es). After detecting a purchase transaction, the processor analyzes the collected purchase transaction information to segment the items purchased and infer purchase classes that comprise groups of items ordinarily purchased together.

---

[7] I note that the critical date for the '868 Patent is December 23, 1994. I understand (and the Cook Report confirms) that the critical date for the '525 Patent is October 30, 1994. The Cook Report reads in part: "The '868 Patent was "known or used by others" in the United States prior to the October 30, 1994 critical date for the '525 Patent" (Cook Report Paragraph 155). However, based on its December 23, 1994 filing date the '868 Patent does not qualify as prior art under Section 102(a) with respect to the '525 Patent. I will, however address the points raised by the Cook Report.

158.   Upon the inference of purchase class(es), an operation is automatically initiated in the neural network subsystem(s) to identify items that are missing from the purchase transaction that are members of the respective inferred purchase class that otherwise would likely be represented in the purchase transaction. The missing items are identified relative to contexts derived as relevant upon the occurrence of an event. These contexts include the purchase transaction item information and the class definitions used to delineate the purchase class(es). A subsequent action based on the inferred context(s) would be a purchase suggestion for one or more of the missing items, and/or an automatically dispensed coupon, and/or another sales promotion dispensed by output device, such as a printer or display terminal.

159.   In this way, the sales promotion selection system automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases.

160.   The foregoing description is by way of example only and is intended to illustrate, in general terms, the functionality of the described system to provide context. As I discuss in the Claim chart, it is my opinion that under the Court's constructions, the asserted Claims 1-3, 5-8, 10, 12, 20, 24, 34, 35, 37 and 40 of the '525 Patent are anticipated by the '868 Patent under 35 U.S.C. § 102 (a) and (b). It is also my opinion that the remaining asserted Claims are obvious in view of the '868 Patent, either alone or in combination with other references herein.

161.   A detailed analysis of how this reference anticipates and/or renders obvious the asserted Claims of the '525 Patent is provided in Appendix C, pages 200-264.

Relevance of the Cragun '868 Patent to the '525 Patent

Terms from the '525 Patent including *rule*, and *inference* are not mentioned in the Cragun '868 Patent; the term *context* only appears in the generic sense of "In this context," not in the technical sense of the '525 Patent. The only mention of *event* is "a purchase event identification," [Cragun, 19:57-58] not in reference to a separate event manager subsystem.

Dr. Cook describes the operation of the Cragun '868 Patent in terms (underlined below) meant to evoke '525 Patent concepts when he states:

"As items are purchased in a store, the recorded transaction information is detected by the processor as a change in <u>state</u> indicative of an <u>event</u> occurring within the system. ... Upon the <u>inference</u> of purchase class(es), an operation is <u>automatically</u> initiated in the neural network subsystem(s) ... A subsequent action based on the <u>inferred context(s)</u> would be a purchase suggestion for one or more of the missing items, and/or an automatically dispensed coupon, and/or another sales promotion dispensed by output

265

device, such as a printer or display terminal." [Dr. Cook's Expert Report, paragraphs 157, 158, underscore added]

In fact the steps just involve the ordinary event of a customer wishing to make a purchase using the system, not the technical sense of an event in the '525 Patent Claim 1 that involves "detect[ing] . . . infer[ing] . . . and automatically initiat[ing] an operation").

The '525 Patent suggests that any of a collection of learning technologies could be used in sales force automation systems. In the Cragun '868 Patent, the term *learning* occurs but only in conjunction with the neural network. The patent states:

> "The artificial neural network used in this embodiment has a feed forward architecture using a back propagation learning algorithm. The details of such network construction will be understood by those skilled in the art without further explanation." [Cragon, 5:64-6:1]

> "In this way, the system can learn and evolve." [Cragon, 7:2]

However, it is clear from the Cragun '868 Patent that this learning occurs only *within* a particular subsystem.

In neither of the '525 patent or the Cragun '868 Patent do the patent specifications claim that they are inventing a new learning algorithm. In the Cragun '868 Patent, the neural network(s) are effectively separate subsystems, each on their own, that communicate using normal communication paths with other subsystems, not using events and inference.

In addition, the '868 Patent is similar to, and hence cumulative to, much of the prior art that was before the examiner during the prosecution of the '525 Patent. For example, the '868 Patent is cumulative to the following systems which, I understand, were developed by the assignee of the '525 Patent – Clear with Computers: (i) the ISIS System, which was of record during the prosecution of the '525 Patent; and (ii) the Truck Force Tools System which was of record during the prosecution of the '525 Patent. In addition, the '868 Patent is cumulative to a

266

number of the United States Patents that were considered by the examiner during the prosecution

of the '525 Patent.

VI.E. Claim 1 in view of the Cragun '868 Patent

Claim 1, preamble - language

- "A computer implemented sales system used to facilitate a sales process, the system comprising:"

Claim 1, preamble - construction

The Court has not construed this preamble. My analysis construes the terms of this

preamble in accordance with their ordinary and customary meaning to one of ordinary skill in the

art during the time frame of October 1995.

Claim 1, preamble - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this preamble is as follows:

> The preamble is not a limitation, nonetheless title and abstract: "An automated sales promotion selection system"

Claim 1, preamble - my analysis of the Cragun '868 Patent

The Court has not construed this preamble: "A computer implemented sales system used

to facilitate a sales process, the system comprising:"

The Cragun '868 Patent describes "a sales system used to facilitate a sales process."

Claim 1, element a - language

- "a plurality of subsystems configured to facilitate one or more actions performed during at least one phase of the sales process; and"

267

Claim 1, element a - construction

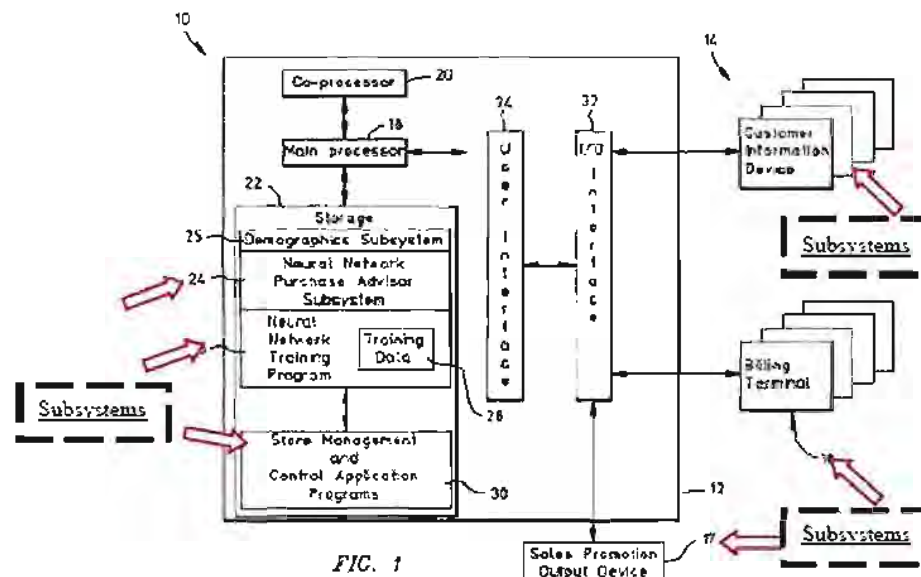- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information
> Device 14 (Fig.1).
>
> Fig. 1 shows an automatic sales promotion selection system 10, construction in
> accordance with the present invention, having a computer system 12 that communicates
> with one or more customer information devices 14 and billing terminals 16. (Col. 3, line
> 66-col. 4, line 3).

FIG. 1

> Col. 2 lines 32-42. The system includes a customer information device that receives
> customer data relating to customer purchases of items from an inventory of items, a
> central processing unit having a sales promotion neural network and a storage unit
> containing a plurality of item identifiers comprising potential customer purchases of
> additional items from the inventory, and an output device that receives the item
> identifiers of the likely purchases determined by the sales promotion neural network and
> produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 1, element a - my analysis of the Cragun '868 Patent

The Cragun '868 Patent performs this Claim element: "A computer implemented sales system used to facilitate a sales process, the system comprising:"

It does so for one small step in a sale force automation system: generating a list of suggested purchases for a consumer, a process which or may not involve a salesperson.

Claim 1, element b - language

- "an event manager, coupled to the subsystems, the event manager detecting one or more changes in state characteristic of an event occurring within the system,"
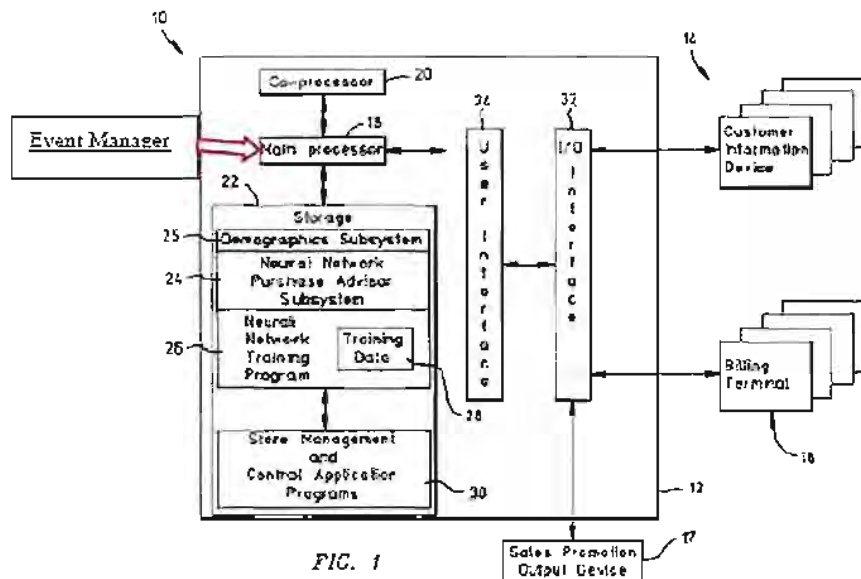
Claim 1, element b - construction

- "Subsystem" - "a system that is part of a larger system";

- "Event manager" - "hardware and/or software";

- "Changes in state characteristic of an event" - "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

269

Claim 1, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

FIG. 1

Computer system 12, Neural network purchase adviser subsystem 24, demographic prediction subsystem 25;

Col. 4 lines 28-30. The computer system 12 operates under control of a main processor 18, also referred to as a central processing unit (CPU).

Col. 4 lines 31-34. The CPU retrieves and stores data from a memory storage unit 22, which includes a neural network purchase advisor subsystem 24.

Col. 4 lines 40-45. The customer information devices 14 and billing terminals 16 communicate with the computer system 12 using an input/output interface 32, which in turn is connected to a user interface 34 that communicates with the CPU 18. The sales output device 17 also is connected to the input/output interface.

Col. 4 lines 55-57. As items are purchased in a store, the neural network purchase advisor subsystem is invoked under the control of the CPU 18.

Col. 4 lines 59-62. Purchase details comprising purchase transaction data from a customer purchase are automatically stored into the memory 22 as a sales clerk registers the purchases.

Col. 7 lines 49-57. FIG. 3 is a representation of the data structure 62 used by the computer system 12 of FIG. 1 in constructing the purchase data. The data structure is referred to as the purchase detail file. FIG. 3 shows that the purchase detail file 62 contains information fields including a purchase identification number 64, also referred to

270

as a transaction number, the date of the purchase 66, the time of the purchase 68, a first item number 70 that identifies an item purchased during the store visit, and a pointer 72 to a next purchase data record 74.

Sales made via telephone orders and/or in the telemarketing context can be used with the system. (col. 18, lines 16-20).

The demographic prediction subsystem 25 predicts the customer population that can be expected to be within the store at any one time based on a variety of factors. (Col. 16, lines 58-66).

Claim 1, element b - my analysis of the Cragun '868 Patent

The Cragun '868 Patent does not perform this Claim element: "an event manager, coupled to the subsystems, the event manager detecting one or more changes in state characteristic of an event occurring within the system,"

The Cragun '868 Patent's only mention of *event* is "a purchase event identification," [Cragun, 19:57-58] not in reference to a separate event manager subsystem, whereas in paras. 157 and 158, Dr. Cook identifies the main processor of a computer as an event manager. Dr. Cook describes the operation of the Cragun '868 Patent in terms (underlined below) meant to evoke '525 Patent concepts when he states:

> "As items are purchased in a store, the recorded transaction information is detected by the processor as a change in <u>state</u> indicative of an <u>event</u> occurring within the system. ... Upon the <u>inference</u> of purchase class(es), an operation is <u>automatically</u> initiated in the neural network subsystem(s) ... A subsequent action based on the <u>inferred context(s)</u> would be a purchase suggestion for one or more of the missing items, and/or an automatically dispensed coupon, and/or another sales promotion dispensed by output device, such as a printer or display terminal." [Dr. Cook's Expert Report, paragraphs 157, 158, underscore added]

However, the Cragun '868 Patent just involve conventional technology used to implement the ordinary event (situation) of a customer wishing to make a purchase using the system, not the technical sense of an event in the '525 Patent Claim 1 that involves "detect[ing] . . . infer[ing] . . . and automatically initiat[ing] an operation").

271

Claim 1, element c - language

- "Inferring occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state, and"

Claim 1, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element c - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. Col. 4 lines 11-15. In this way, the sales promotion selection system 10 automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases. Col. 4 lines 21-27.

> The purchase adviser 24 neural network automatically collects purchase transaction data, segments the purchase items of a particular customer purchase transaction into predetermined purchase classes that define groups of items ordinarily purchased together, and identifies items that belong to a purchase class but were missing from the purchase transaction. (Fig. 10, col. 11, line 36-col. 12, line 13; col. 18, lines 21-27).

> The demographic prediction subsystem 25 processes the collected data to generate output comprising a predicted customer population inside the store at a given time. The demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases. That is, a listing of items that the subsystem predicts would be purchased by a typical customer at the given time. (Col. 17, lines 44-60).
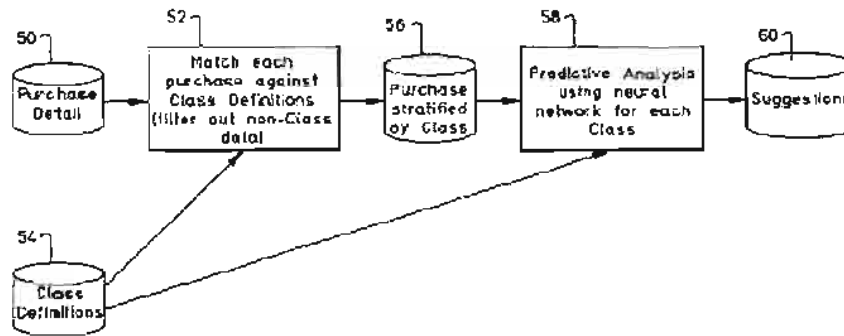
272

FIG. 2

Col. 4 line 65 – Col. 5 line 12. Purchase items listed in the purchase transaction data are compared against predetermined purchase class definitions. In this step, purchase items that have not been characterized as fitting into one of the predetermined purchase classes are filtered out of the purchase data. ... The class definitions are obtained from the memory storage unit 22, as represented by the flow diagram box numbered 54.

For each class containing items that match with one or more of the items purchased, a sub list is created by the CPU 18. ... The CPU creates a list of the purchase items belonging to each class. This step is represented by the flow diagram box numbered 56.

Col. 5 lines 29-35. Classes may include items that have a purchase relationship but that do not clearly fit into an aptly named category. Analysis of purchase information might be necessary to identify such classes. Each one of the classes comprises a list of purchase items that, based upon analysis of historical data, define items frequently purchased together.

Col. 7 line 66 – Col. 8 line 1. FIG. 4 is a representation of the data structure 80 that defines the classes. The data structure is referred to as the class definition file.

Col. 16 lines 62-66. The demographics prediction subsystem advantageously uses a customer population neural network that is designed to make predictions of the customers in the store and then to predict purchases that such a customer population would make.

Col. 17 lines 5-37. FIG. 18 is a representation of a demographics data structure 303 used by the CPU 18 (FIG. 1) in running the customer population neural network of the demographics prediction subsystem. ...

The first data field illustrated in the data structure 302 is for the time of day 304. Time of day can be important in predicting customer populations because, for example, buyers with particular characteristics might shop early in the day as opposed to those who shop late in the day or late in the evening. The next data field is for the date 306. The date field permits the system to account for seasonal buying characteristics, holiday variations, and other buyer characteristics associated with the day of the week, month, or year. A weather data field 308 permits the system to further account for seasonal or other weather-related phenomenon. For example, rainy weather likely will result in a customer

273

population favorably disposed to suggestions for purchases of rain gear such as boots, umbrellas, and overcoats, regardless of other purchases made during a store purchase transaction.

Another data field is one for customer data 310, which includes data relating to recent purchases by other customers, spending habits of the local population, economic data, and the like. The next data field is for buyer preference data 312, which comprises item identification numbers of products predicted to be purchased.

Col. 17 lines 51-55. Represented by the box numbered 324, is to process the collected data with the demographic neural network to generated output comprising a predicted customer population inside the store at a given time.

Claim 1, element c – my analysis of the Cragun '868 Patent

The Cragun '868 Patent does not perform this Claim element: "Inferring occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state,".

The Cragun '868 Patent does not mention *inference* or *context* as used in the '525 Patent.

Dr. Cook describes the operation of the Cragun '868 Patent in terms (underlined below) meant to evoke '525 Patent concepts when he states:

> "As items are purchased in a store, the recorded transaction information is detected by the processor as a change in <u>state</u> indicative of an <u>event</u> occurring within the system. ... Upon the <u>inference</u> of purchase class(es), an operation is <u>automatically</u> initiated in the neural network subsystem(s) ... A subsequent action based on the <u>inferred context(s)</u> would be a purchase suggestion for one or more of the missing items, and/or an automatically dispensed coupon, and/or another sales promotion dispensed by output device, such as a printer or display terminal." [Dr. Cook's Expert Report, paragraphs 157, 158, underscore added]

However, the Cragun '868 Patent just involves conventional technology used to implement the ordinary event (situation) of a customer wishing to make a purchase using the system, not the technical sense of an event in the '525 Patent Claim 1 that involves "detect[ing] . . . infer[ing] . . . and automatically initiat[ing] an operation".

274

Claim 1, element d - language

- "automatically initiating an operation in one or more particular subsystems of the computer to facilitate a new action based on the inferred context."

Claim 1, element d - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Subsystem" - "a system that is part of a larger system";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element d - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> The demographic prediction subsystem 25 provides the predicted sales purchase data to the purchase advisor subsystem and its neural networks. The purchase advisor subsystem will segment the purchase items into purchase classes and generate selected sales promotions, such as purchase suggestions. The selected sales promotions can be used on the general customer population or for direct mail campaigns and the like, rather than the use described previously of targeting particular customers making purchases.

> The output comprising the predicted customer population in the store and the output comprising the predicted purchase transactions can be used independently of any use in the purchase advisor subsystem.

> It might be useful to a store manager to have a sense of customers that can be expected in a store at anyone time, or to have an understanding of what products can reasonably be expected to be purchased at a given time of day. (Col. 17, line 60-col. 18, line 15).

> Col. 5 lines 42-49. For each class, the purchase items that fit within the class are processed through the neural network for that class to predict missing items that ordinarily are purchased in a transaction at the same time as the purchase items, as represented by the flow diagram box numbered 58 in FIG. 2. These additional items are

275

suggested to the customer for purchase, as indicated by the flow diagram box numbered 60.
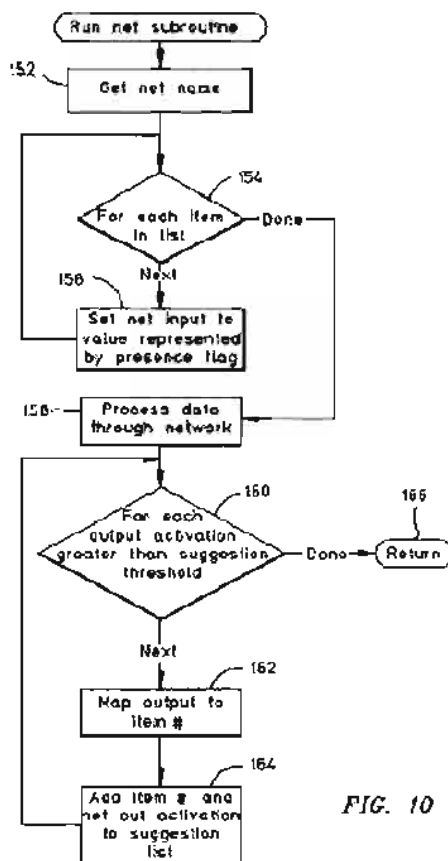

FIG. 10

Col. 2, lines 56-59: The missing items can then be suggested by a sales clerk for purchase or can be the subject of an automatically produced promotion, such as a coupon that can be redeemed for a discounted purchase price.

Col. 18, lines 27-29. The system then selects a sales promotion to suggest the purchase of a missing item that likely will result in an additional sale.

Col. 17 lines 55-67. At box 326, the demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases. That is, a listing of items that the subsystem predicts would be purchased by a typical customer at the given time.

The next step, represented by the flow diagram box numbered 328, is to provide the predicted sales purchase data to the purchase advisor subsystem and its neural networks. As described above, the purchase advisor subsystem will segment the purchase items into purchase classes and generate selected sales promotions, such as purchase suggestions.

276

Col. 18, line 2-6. The selected sales promotions can be used on the general customer population or for direct mail campaigns and the like, rather than the use described previously of targeting particular customers making purchases.

Claim 1, element d - my analysis of the Cragun '868 Patent

The Cragun '868 Patent does not perform this Claim element: "automatically initiating an operation in one or more particular subsystems of the computer to facilitate a new action based on the inferred context."

As described in Claim 1, element d, the Cragun '868 Patent does not describe an inference procedure nor a mechanism like contexts.

VI.E. Claim 2 in view of the Cragun '868 Patent

Claim 2 - language

- "[A system as recited in claim 1,] wherein the inferred context includes information related to at least one phase of the sales process."

Claim 2 - construction

- "context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 2 - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

277

CONFIDENTIAL

[Claim 1 chart incorporated by reference]

The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. Col. 4 lines 11-15.

In this way, the sales promotion selection system 10 automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases. Col. 4 lines 21-27.

Claim 2 – my analysis of the Cragun '868 Patent

The Cragun '868 Patent does not perform this claim element: "wherein the inferred context includes information related to at least one phase of the sales process."

Among other things, while it is clear that, in the Cragun '868 Patent, information relevant to a sales transaction (e.g., customer purchase data, purchase classes, and previous sales by other customers) is passed among subsystems of the sales system, there is no evidence from the Cook Report or the Cragun '868 Patent that context ["information already existing within the system that becomes relevant upon the occurrence of an event"] was *inferred* using a "logical process by which a factual conclusion is derived from known facts by the application of logical rules". The Cragun '868 Patent does not describe an event manager that "detect[s] . . . infer[s] . . . and automatically initiat[es] an operation" as required by Claim 1 or that any inference step that is part of an event takes place.

VI.E. Claim 3 in view of the Cragun '868 Patent

Claim 3 – language

- "[A system as recited in claim 1,] wherein the inferred context includes information related to whether a previous event has occurred in the sales process.

278

Claim 3 - construction

- "context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 3 - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> [Claim 1 chart incorporated by reference]
>
> The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. The system then uses neural networks to identify items that are missing from a purchase transaction that are members of a purchase class otherwise represented in the purchase transaction. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal. In this way, the sales promotion selection system 10 automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases. Col. 4 lines 11-27.

Claim 3 - my analysis of the Cragun '868 Patent

The Cragun '868 Patent does not perform this claim element: "wherein the inferred context includes information related to whether a previous event has occurred in the sales process."

Among other things, while it is clear that, in the Cragun '868 Patent, a previous event (like the customer beginning to make a purchase) can result in a later event like the system prompting the sales clerk to promote additional purchases or issuing the customer a coupon,

279

there is no evidence from the Cook Report or the Cragun '868 Patent that context ["information already existing within the system that becomes relevant upon the occurrence of an event"] was *inferred* using a "logical process by which a factual conclusion is derived from known facts by the application of logical rules". The Cragun '868 Patent does not describe an event manager that "detect[s] . . . infer[s] . . . and automatically initiat[es] an operation" as required by Claim 1 or that any inference step that is part of an event takes place.

VI.E.   Claim 5 in view of the Cragun '868 Patent

Claim 5, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 5, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 5, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a

280

central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 5, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

The Cragun '868 Patent performs some of the function of the '525 Patent's "time with customer" subsystem:

"The time with customer component receives necessary information, for example, pricing and financing data from the data component, and stores information obtained during the time spent with the customer, such as the customer's particular needs and desires in the databases of the data component 116." ['525 Patent, 5:24-30]

The function of the Cragun '868 Patent begins with the customer purchasing an item or items, not before, but during the purchase, the Cragun system can promote additional items.

Furthermore, this claim element requires a lead, but, in the Cragun '868 Patent, a consumer who chooses to make a purchase cannot properly be called a lead.

Claim 5, element b - language

- "a lead generation subsystem configured to convert a name to a potential customer."

Claim 5, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 5, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig. 1).

> Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

> Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

> Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

> Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

> Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

282

Claim 5, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

The Cragun '868 Patent does not perform the claim element: "a lead generation subsystem configured to convert a name to a potential customer."

Among other things, the Cragun '868 Patent does not contain a lead generation subsystem. The '525 Patent describes a lead generation subsystem as follows

> "The lead generation component 102 is provided to assist sales personnel to identify leads, to generate qualified leads and to begin the sales process. The lead generation component may include, for example, automated systems designed to assist the sales personnel in carrying out such tasks as telemarketing, kiosk presentations, trade show demonstrations, database marketing, electronic advertising, etc. ['525 Patent, 4:22-27]

While the Cragun '868 Patent is capable of promoting additional items to a customer during a sales transaction, the Cragun system does not "convert a name to a potential customer" as required by this claim element, since the customer is already known.

VI.E. Claim 6 in view of the Cragun '868 Patent

Claim 6, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 6, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 6, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

283

[Claim 1 chart incorporated by reference]

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 6, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

See discussion for Claim 5a which is incorporated herein by reference.

Claim 6, element b - language

- "an order management subsystem configured to convert the sale such that a product or service delivered matches a product or service sold."

Claim 6, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 6, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information
> Device 14 (Fig.1).

> Fig. 1 shows an automatic sales promotion selection system 10, construction in
> accordance with the present invention, having a computer system 12 that communicates
> with one or more customer information devices 14 and billing terminals 16. (Col. 3, line
> 66-col. 4, line 3).

> Col. 2 lines 32-42. The system includes a customer information device that receives
> customer data relating to customer purchases of items from an inventory of items, a
> central processing unit having a sales promotion neural network and a storage unit
> containing a plurality of item identifiers comprising potential customer purchases of
> additional items from the inventory, and an output device that receives the item
> identifiers of the likely purchases determined by the sales promotion neural network and
> produces a sales promotion relating to at least one of the item identifiers.

> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more
> customer information devices 14 and billing terminals 16.

> Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion,
> an automatically dispensed coupon, or other sales promotion indicated by an output
> device 17 such as a printer or display terminal.

> Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase
> advisor subsystem 24 having neural networks that process purchase data as described
> further below.

> Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase
> advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer
> population that can be expected to be within the store at anyone time, based on a variety
> of factors.

Claim 6, element b - my analysis of the Cragun '868 Patent

> See claim elements missing from Claim 1.

285

The Cragun '868 Patent does not perform the claim element: "an order management subsystem configured to convert the sale such that a product or service delivered matches a product or service sold."

Among other things, the Cragun '868 Patent does not contain an order management subsystem. The '525 Patent describes an order management subsystem as follows

"The order management component 106 assists sales personnel in efficiently managing the critical sales process phase that encompasses the time between the purchase decision and the time the product or service is delivered. For some products or services, this could be a short period of time, while for others it may be many months or even years. The order management component 106 allows the sales personnel to electronically manage changes and provide needed information to the customer during this critical time." ['525 Patent, 5:31-39]

The Cragun '868 Patent aids in making a sale but provides no description of after-sale follow-up.

VI.E. Claim 7 in view of the Cragun '868 Patent

Claim 7, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 7, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 7, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

286

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig. 1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 7, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

See discussion for Claim 5a which is incorporated herein by reference.

Claim 7, element b - language

- "a customer retention subsystem configured to convert an existing customer into a lead, so as to generate repeat sales."

Claim 7, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 7, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information
> Device 14 (Fig.1).

> Fig. 1 shows an automatic sales promotion selection system 10, construction in
> accordance with the present invention, having a computer system 12 that communicates
> with one or more customer information devices 14 and billing terminals 16. (Col. 3, line
> 66-col. 4, line 3).

> Col. 2 lines 32-42. The system includes a customer information device that receives
> customer data relating to customer purchases of items from an inventory of items, a
> central processing unit having a sales promotion neural network and a storage unit
> containing a plurality of item identifiers comprising potential customer purchases of
> additional items from the inventory, and an output device that receives the item
> identifiers of the likely purchases determined by the sales promotion neural network and
> produces a sales promotion relating to at least one of the item identifiers.

> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more
> customer information devices 14 and billing terminals 16.

> Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion,
> an automatically dispensed coupon, or other sales promotion indicated by an output
> device 17 such as a printer or display terminal.

> Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase
> advisor subsystem 24 having neural networks that process purchase data as described
> further below.

> Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase
> advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer
> population that can be expected to be within the store at anyone time, based on a variety
> of factors.

Claim 7, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

288

The Cragun '868 Patent performs the claim element: "a customer retention subsystem configured to convert an existing customer into a lead, so as to generate repeat sales." One of the main purposes of the Cragun '868 Patent is to generate promotions that could lead to future repeat sales.

VI.E. Claim 8 in view of the Cragun '868 Patent

Claim 8, element a - language

- " [A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer and prompting the buying customer to make a buying decision, so as to close a sale; and"

Claim 8, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 8, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item

289

identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 8, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

See discussion for Claim 5a which is incorporated herein by reference.

The Cragun '868 Patent does not perform "prompting the buying customer to make a buying decision, so as to close a sale."

Claim 8, element b - language

* "a self management subsystem configured to assist a salesperson in managing sales information."

Claim 8, element b - construction

* "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 8, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

290

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 8, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

The Cragun '868 Patent does not perform the claim element: "a self management

subsystem configured to assist a salesperson in managing sales information."

Among other things, the Cragun '868 Patent does not contain a self management

subsystem. The '525 Patent describes a self management subsystem as follows

"The self management component 110 assists sales personnel to manage their opportunities, time, contacts, schedules, goals, tasks, etc." ['525 Patent, 6:30-32]

291

There is no description of such a subsystem in the Cragun '868 Patent.

VI.E. Claim 10 in view of the Cragun '868 Patent

Claim 10, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 10, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 10, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> [Claim 1 chart incorporated by reference]
>
> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).
>
> Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).
>
> Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.
>
> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 10, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

See discussion for Claim 5a which is incorporated herein by reference.

Claim 10, element b - language

- "a sales management subsystem configured to assist a sales manager in managing a plurality of salespeople." "

Claim 10, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 10, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 10, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

The Cragun '868 Patent does not perform the claim element: "a sales management

subsystem configured to assist a sales manager in managing a plurality of salespeople."

Among other things, the Cragun '868 Patent does not contain such a sales management

subsystem "to assist a sales manager in managing a plurality of salespeople."

VI.E. Claim 12 in view of the Cragun '868 Patent

Claim 12, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a lead management subsystem configured to manage a conversion of a lead to a prospect and of the prospect to a buying customer, and"

294

Claim 12, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 12, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information
Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in
accordance with the present invention, having a computer system 12 that communicates
with one or more customer information devices 14 and billing terminals 16. (Col. 3, line
66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives
customer data relating to customer purchases of items from an inventory of items, a
central processing unit having a sales promotion neural network and a storage unit
containing a plurality of item identifiers comprising potential customer purchases of
additional items from the inventory, and an output device that receives the item
identifiers of the likely purchases determined by the sales promotion neural network and
produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more
customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion,
an automatically dispensed coupon, or other sales promotion indicated by an output
device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase
advisor subsystem 24 having neural networks that process purchase data as described
further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase
advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer
population that can be expected to be within the store at anyone time, based on a variety
of factors.

Claim 12, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

The Cragun '868 Patent performs this claim element insofar as its promotion generating subsystem is a lead management subsystem.

Claim 12, element b - language

- "a self management subsystem configured to assist a salesperson in managing sales information."

Claim 12, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 12, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

> Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

> Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

296

CONFIDENTIAL

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 … includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 12, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 1.

The Cragun '868 Patent does not describe a "self-management subsystem". See

discussion for Claim 8b which is incorporated herein by reference.

VI.E. Claim 20 in view of the Cragun '868 Patent

Claim 20, preamble - language

- "A method of facilitating a sales process using a computer arrangement having a plurality of subsystems configured to facilitate one or more actions performed during at least one phase of the sales process, the method comprising the steps of:"

Claim 20, preamble - construction

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

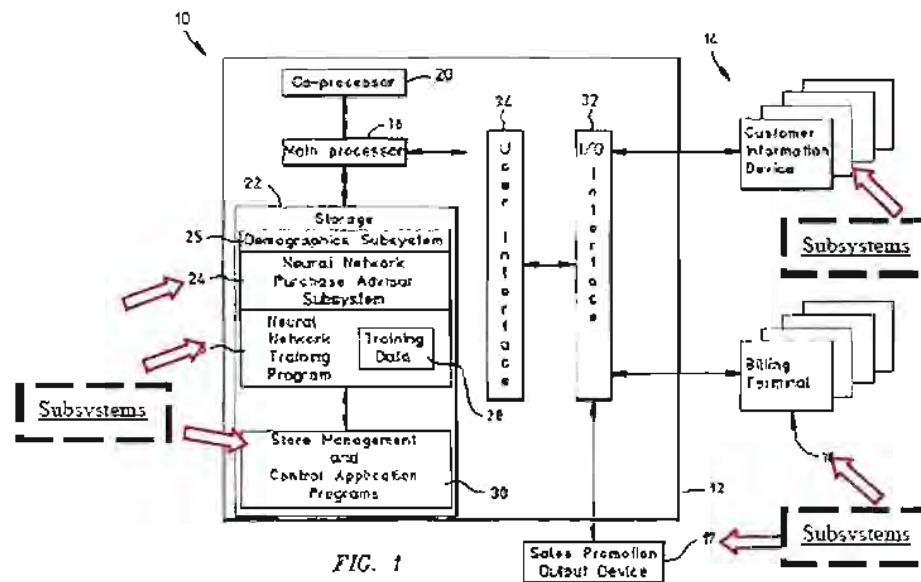**Claim 20, preamble - analysis by Dr. Cook of the Cragun '868 Patent**

Dr. Cook's analysis of this preamble is as follows:

The preamble is not a limitation, nonetheless title and abstract: "An automated sales promotion selection system"

297

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

(Col. 3, line 66-col. 4, line 3).

FIG. 1

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 … includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer

298

population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 20, preamble – my analysis of the Cragun '868 Patent

My analysis of the preamble for this method Claim is the same as my analysis for the preamble and Claim 1, element a combined.

Claim 20, element a – language

- "automatically detecting one or more changes in state characteristic of an event occurring in the sales process;"

Claim 20, element a – construction

- "Changes in state characteristic of an event" – "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system.

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 20, element a – analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 4 lines 40-45. The customer information devices 14 and billing terminals 16 communicate with the computer system 12 using an input/output interface 32, which in turn is connected to a user interface 34 that communicates with the CPU 18. The sales output device 17 also is connected to the input/output interface.

> Col. 4 lines 55-57. As items are purchased in a store, the neural network purchase advisor subsystem is invoked under the control of the CPU 18.

> Col. 4 lines 59-62. Purchase details comprising purchase transaction data from a customer purchase are automatically stored into the memory 22 as a sales clerk registers the purchases.

> Col. 7 lines 49-57. FIG. 3 is a representation of the data structure 62 used by the computer system 12 of FIG. 1 in constructing the purchase data. The data structure is referred to as the purchase detail file. FIG. 3 shows that the purchase detail file 62 contains information fields including a purchase identification number 64, also referred to as a transaction number, the date of the purchase 66, the time of the purchase 68, a first

299

CONFIDENTIAL

item number 70 that identifies an item purchased during the store visit, and a pointer 72 to a next purchase data record 74.

Sales made via telephone orders and/or in the telemarketing context can be used with the system. (col. 18, lines 16-20).

The demographic prediction subsystem 25 predicts the customer population that can be expected to be within the store at any one time based on a variety of factors. (Col. 16, lines 58-66).

Claim 20, element a – my analysis of the Cragun '868 Patent

The material differences between this element and the "detecting" of Claim 1, element b are that Claim 20 has the additional limitation of "automatically" detecting, and it involves detecting state changes in events occurring in the sales process, as opposed to Claim 1 which involves detecting state changes of events occurring in the system.

My analysis of this element is the same as my analysis for Claim 1, element b.

Claim 20, element b – language

- "Inferring occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state; and"

Claim 20, element b – construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

300

CONFIDENTIAL

Claim 20, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. Col. 4 lines 11-15. In this way, the sales promotion selection system 10 automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases. Col. 4 lines 21-27.

> The purchase adviser 24 neural network automatically collects purchase transaction data, segments the purchase items of a particular customer purchase transaction into predetermined purchase classes that define groups of items ordinarily purchased together, and identifies items that belong to a purchase class but were missing from the purchase transaction. (Fig. 10, col. 11, line 36-col. 12, line 13; col. 18, lines 21-27).

> The demographic prediction subsystem 25 processes the collected data to generate output comprising a predicted customer population inside the store at a given time. The demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases. That is, a listing of items that the subsystem predicts would be purchased by a typical customer at the given time. (Col. 17, lines 44-60).
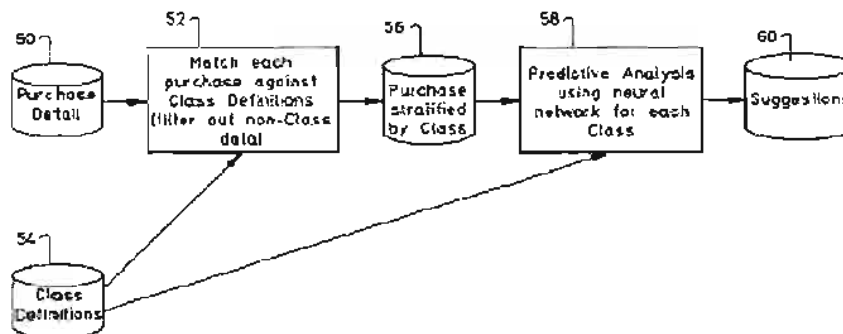

FIG. 2

Col. 4 line 65 – Col. 5 line 12. Purchase items listed in the purchase transaction data are compared against predetermined purchase class definitions. In this step, purchase items that have not been characterized as fitting into one of the predetermined purchase classes are filtered out of the purchase data. ... The class definitions are obtained from the memory storage unit 22, as represented by the flow diagram box numbered 54.

For each class containing items that match with one or more of the items purchased, a sub list is created by the CPU 18. ... The CPU creates a list of the purchase items belonging to each class. This step is represented by the flow diagram box numbered 56.

Col. 5 lines 29-35. Classes may include items that have a purchase relationship but that do not clearly fit into an aptly named category. Analysis of purchase information might be necessary to identify such classes. Each one of the classes comprises a list of purchase items that, based upon analysis of historical data, define items frequently purchased together.

Col. 7 line 66 – Col. 8 line 1. FIG. 4 is a representation of the data structure 80 that defines the classes. The data structure is referred to as the class definition file.

Col. 16 lines 62-66. The demographics prediction subsystem advantageously uses a customer population neural network that is designed to make predictions of the customers in the store and then to predict purchases that such a customer population would make.

Col. 17 lines 5-37. FIG. 18 is a representation of a demographics data structure 303 used by the CPU 18 (FIG. 1) in running the customer population neural network of the demographics prediction subsystem. ...

The first data field illustrated in the data structure 302 is for the time of day 304. Time of day can be important in predicting customer populations because, for example, buyers with particular characteristics might shop early in the day as opposed to those who shop late in the day or late in the evening. The next data field is for the date 306. The date field permits the system to account for seasonal buying characteristics, holiday variations, and other buyer characteristics associated with the day of the week, month, or year. A weather data field 308 permits the system to further account for seasonal or other weather-related phenomenon. For example, rainy weather likely will result in a customer population favorably disposed to suggestions for purchases of rain gear such as boots, umbrellas, and overcoats, regardless of other purchases made during a store purchase transaction.

Another data field is one for customer data 310, which includes data relating to recent purchases by other customers, spending habits of the local population, economic data, and the like. The next data field is for buyer preference data 312, which comprises item identification numbers of products predicted to be purchased.

Col. 17 lines 51-55. Represented by the box numbered 324, is to process the collected data with the demographic neural network to generated output comprising a predicted customer population inside the store at a given time.

Claim 20, element b – my analysis of the Cragun '868 Patent

My analysis of this element for this method Claim is the same as my analysis for system

Claim 1, element c.

302

Claim 20, element c - language

- "automatically initiating an operation in one or more particular subsystems of the computer to facilitate a new action based on the inferred context."

Claim 20, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 20, element c - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> The demographic prediction subsystem 25 provides the predicted sales purchase data to the purchase advisor subsystem and its neural networks. The purchase advisor subsystem will segment the purchase items into purchase classes and generate selected sales promotions, such as purchase suggestions. The selected sales promotions can be used on the general customer population or for direct mail campaigns and the like, rather than the use described previously of targeting particular customers making purchases.

> The output comprising the predicted customer population in the store and the output comprising the predicted purchase transactions can be used independently of any use in the purchase advisor subsystem.

> It might be useful to a store manager to have a sense of customers that can be expected in a store at anyone time, or to have an understanding of what products can reasonably be expected to be purchased at a given time of day. (Col. 17, line 60-col. 18, line 15).

> Col. 5 lines 42-49. For each class, the purchase items that fit within the class are processed through the neural network for that class to predict missing items that ordinarily are purchased in a transaction at the same time as the purchase items, as represented by the flow diagram box numbered 58 in FIG. 2. These additional items are

suggested to the customer for purchase, as indicated by the flow diagram box numbered 60.
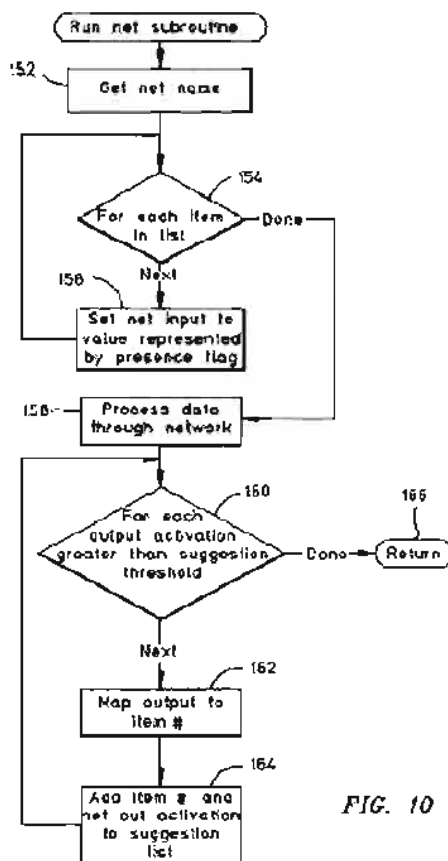

FIG. 10

Col. 2, lines 56-59. The missing items can then be suggested by a sales clerk for purchase or can be the subject of an automatically produced promotion, such as a coupon that can be redeemed for a discounted purchase price.

Col. 18, lines 27-29. The system then selects a sales promotion to suggest the purchase of a missing item that likely will result in an additional sale.

Col. 17 lines 55-67. At box 326, the demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases. That is, a listing of items that the subsystem predicts would be purchased by a typical customer at the given time.

The next step, represented by the flow diagram box numbered 328, is to provide the predicted sales purchase data to the purchase advisor subsystem and its neural networks. As described above, the purchase advisor subsystem will segment the purchase items into purchase classes and generate selected sales promotions, such as purchase suggestions.

304

Col. 18, line 2-6. The selected sales promotions can be used on the general customer population or for direct mail campaigns and the like, rather than the use described previously of targeting particular customers making purchases.

Claim 20, element c - my analysis of the Cragun '868 Patent

My analysis of this element is the same as my analysis for Claim 1, element d.

VI.E. Claim 24 in view of the Cragun '868 Patent

Claim 24 - language

- "A method as recited in claim 20, wherein the inferred context includes information related to at least one phase of the sales process."

Claim 24 - construction

- "context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 24 - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 20 chart incorporated by reference]

The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. The system then uses neural networks to identify items that are missing from a purchase transaction that are members of a purchase class otherwise represented in the purchase transaction. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal. In this

305

way, the sales promotion selection system 10 automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases. Col. 4 lines 11-27.

Claim 24 - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

See discussion for Claim 2 which is incorporated herein by reference.

VI.E. Claim 34 in view of the Cragun '868 Patent

Claim 34, element a - language

- "[A method as recited in claim 20, further comprising the steps of:] inferring occurrence of an event while converting a lead to a buying customer; and"

Claim 34, element a - construction

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 34, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 20 chart incorporated by reference]

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 34, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

See discussion for Claims 2 and 5b which are incorporated herein by reference. In Cragun '868, there is no event described that converts a lead to a buying customer which involves "inferring occurrence of an event," that is, following a ["logical process by which the fact that an event has occurred is derived by application of logical rules"]

Claim 34, element b - language

* "using the particular subsystem to convert an existing customer into a lead, so as to generate repeat sales."

Claim 34, element b - construction

* "subsystem" - "a system that is part of a larger system"

307

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 34, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).
>
> Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).
>
> Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.
>
> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.
>
> Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.
>
> Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.
>
> Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 34, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

The Cragun '868 Patent performs this claim element.

308

VI.E. Claim 35 in view of the Cragun '868 Patent

Claim 35, element a – language

- "[A method as recited in claim 20, further comprising the steps of:] inferring occurrence of an event while converting a lead to a buying customer and prompting the buying customer to make a buying decision; and"

Claim 35, element a – construction

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 35, element a – analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 20 chart incorporated by reference]

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 … includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 35, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

See discussion for Claim 34a which is incorporated herein by reference.

The Cragun '868 Patent does not perform "prompting the buying customer to make a buying decision, so as to close a sale" (even though the system does prompt the sales clerk to offer promotions to the customer that may result in future sales).

Claim 35, element b - language

- "using the particular subsystem to assist a salesperson in managing sales information."

Claim 35, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 35, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig. 1).

310

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 35, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

The Cragun '868 Patent does not perform "using the particular subsystem to assist a salesperson in managing sales information." See discussion for Claim 12b which is incorporated herein by reference.

311

VI.E. Claim 37 in view of the Cragun '868 Patent

Claim 37, element a - language

- "[A method as recited in claim 20, further comprising the steps of:] inferring occurrence of an event while converting a lead to a buying customer; and"

Claim 37, element a - construction

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 37, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> [Claim 20 chart incorporated by reference]
>
> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).
>
> Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).
>
> Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.
>
> Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 … includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 37, element a - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

See discussion for Claims 34a which is incorporated herein by reference.

Claim 37, element b - language

* "using the particular subsystem to assist a sales manager in managing a plurality of salespeople."

Claim 37, element b - construction

* "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 37, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

313

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 ... includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 37, element b - my analysis of the Cragun '868 Patent

See claim elements missing from Claim 20.

The Cragun '868 Patent does not perform "using the particular subsystem to assist a sales manager in managing a plurality of salespeople." See discussion for Claim 10b which is incorporated herein by reference.

VI.E. Claim 40 in view of the Cragun '868 Patent

Claim 40, preamble - language

- "A computer implemented sales system used to facilitate a sales process, the system comprising:"

314

Claim 40, preamble - construction

The Court has not construed this preamble. My analysis construes the terms of this preamble in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, preamble - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this preamble is as follows:

> The preamble is not a limitation, nonetheless title and abstract: "An automated sales promotion selection system"

Claim 40, preamble - my analysis of the Cragun '868 Patent

> My analysis of this preamble is the same as my analysis for Claim 1, preamble.

Claim 40, element a - language

- "a plurality of subsystems configured to electronically facilitate actions performed during the sales process; and"

Claim 40, element a - construction

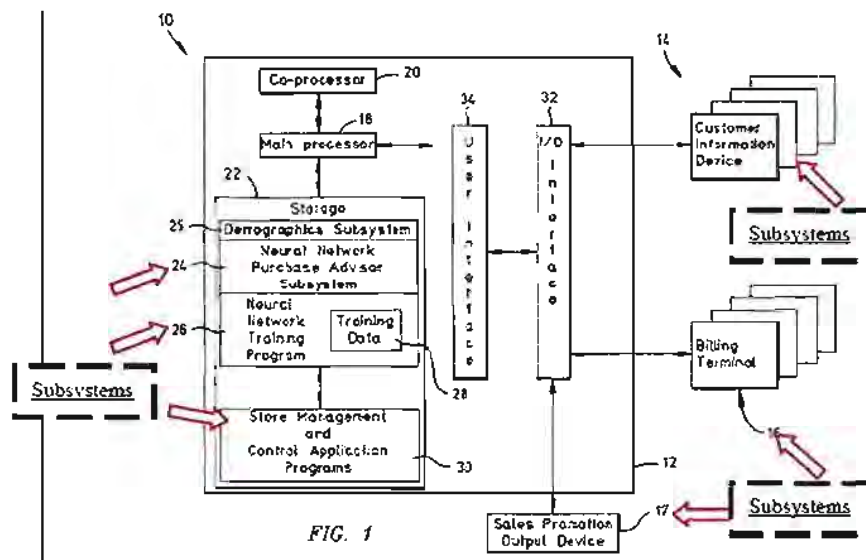- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element a - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> Billing Terminal 16, and Sales Promotion Output Device 17, Customer Information Device 14 (Fig.1).

> Fig. 1 shows an automatic sales promotion selection system 10, construction in accordance with the present invention, having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16. (Col. 3, line 66-col. 4, line 3).

315

FIG. 1

Col. 2 lines 32-42. The system includes a customer information device that receives customer data relating to customer purchases of items from an inventory of items, a central processing unit having a sales promotion neural network and a storage unit containing a plurality of item identifiers comprising potential customer purchases of additional items from the inventory, and an output device that receives the item identifiers of the likely purchases determined by the sales promotion neural network and produces a sales promotion relating to at least one of the item identifiers.

Col. 4 lines 1-3. Having a computer system 12 that communicates with one or more customer information devices 14 and billing terminals 16.

Col. 4 lines 18-22. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal.

Col. 4 lines 28-35. The computer system 12 … includes a neural network purchase advisor subsystem 24 having neural networks that process purchase data as described further below.

Col. 16 lines 58-62. The system of FIG. 1 preferably includes within the purchase advisor subsystem 24 a demographics prediction subsystem 25 that predicts the customer population that can be expected to be within the store at anyone time, based on a variety of factors.

Claim 40, element a - my analysis of the Cragun '868 Patent

My analysis of this element is the same as my analysis for Claim 1, element a.

316

Claim 40, element b - language

- "an event manager coupled to the subsystems and configured to detect one or more changes in state characteristic of an event occurring in the system,"
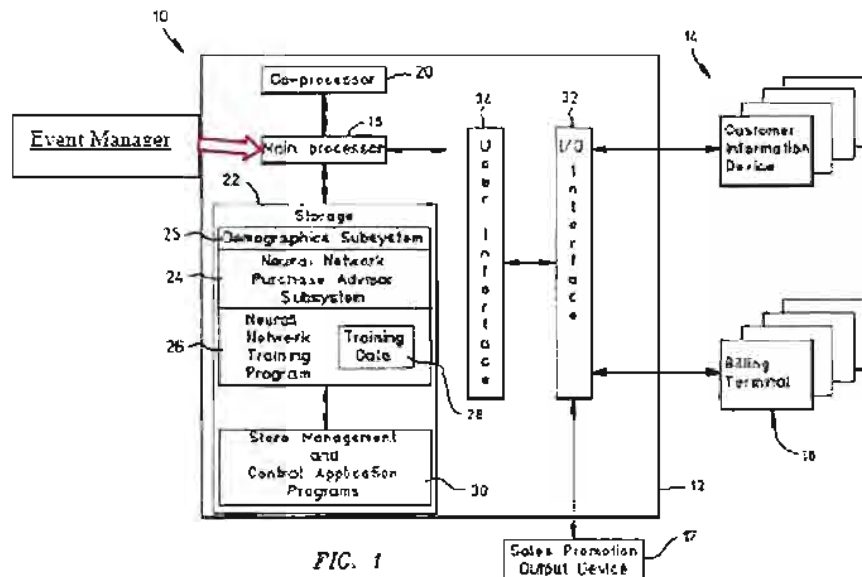
Claim 40, element b - construction

- "Event manager" - "hardware and/or software";

- "Subsystem" - "a system that is part of a larger system";

- "Changes in state characteristic of an event" - "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system.

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element b - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

FIG. 1

Computer system 12, Neural network purchase adviser subsystem 24, demographic prediction subsystem 25;

317

Col. 4 lines 28-30. The computer system 12 operates under control of a main processor 18, also referred to as a central processing unit (CPU).

Col. 4 lines 31-34. The CPU retrieves and stores data from a memory storage unit 22, which includes a neural network purchase advisor subsystem 24.

Col. 4 lines 40-45. The customer information devices 14 and billing terminals 16 communicate with the computer system 12 using an input/output interface 32, which in turn is connected to a user interface 34 that communicates with the CPU 18. The sales output device 17 also is connected to the input/output interface.

Col. 4 lines 55-57. As items are purchased in a store, the neural network purchase advisor subsystem is invoked under the control of the CPU 18.

Col. 4 lines 59-62. Purchase details comprising purchase transaction data from a customer purchase are automatically stored into the memory 22 as a sales clerk registers the purchases.

Col. 7 lines 49-57. FIG. 3 is a representation of the data structure 62 used by the computer system 12 of FIG. 1 in constructing the purchase data. The data structure is referred to as the purchase detail file. FIG. 3 shows that the purchase detail file 62 contains information fields including a purchase identification number 64, also referred to as a transaction number, the date of the purchase 66, the time of the purchase 68, a first item number 70 that identifies an item purchased during the store visit, and a pointer 72 to a next purchase data record 74.

Sales made via telephone orders and/or in the telemarketing context can be used with the system. (col. 18, lines 16-20).

The demographic prediction subsystem 25 predicts the customer population that can be expected to be within the store at any one time based on a variety of factors. (Col. 16, lines 58-66).

Claim 40, element b - my analysis of the Cragun '868 Patent

My analysis of this element is the same as my analysis for Claim 1, element b.

Claim 40, element c - language

- "Infer occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state,"

318

Claim 40, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element c - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. Col. 4 lines 11-15. In this way, the sales promotion selection system 10 automatically collects purchase transaction data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases.
>
> Col. 4 lines 21-27. The purchase adviser 24 neural network automatically collects purchase transaction data, segments the purchase items of a particular customer purchase transaction into predetermined purchase classes that define groups of items ordinarily purchased together, and identifies items that belong to a purchase class but were missing from the purchase transaction. (Fig. 10, col. 11, line 36-col. 12, line 13; col. 18, lines 21-27).
>
> The demographic prediction subsystem 25 processes the collected data to generate output comprising a predicted customer population inside the store at a given time. The demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases. That is, a listing of items that the subsystem predicts would be purchased by a typical customer at the given time. (Col. 17, lines 44-60).
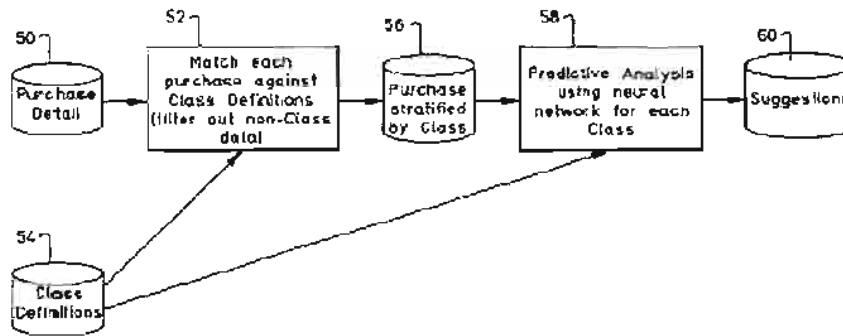
319

FIG. 2

Col. 4 line 65 – Col. 5 line 12. Purchase items listed in the purchase transaction data are compared against predetermined purchase class definitions. In this step, purchase items that have not been characterized as fitting into one of the predetermined purchase classes are filtered out of the purchase data. ... The class definitions are obtained from the memory storage unit 22, as represented by the flow diagram box numbered 54.

For each class containing items that match with one or more of the items purchased, a sub list is created by the CPU 18. ... The CPU creates a list of the purchase items belonging to each class. This step is represented by the flow diagram box numbered 56.

Col. 5 lines 29-35. Classes may include items that have a purchase relationship but that do not clearly fit into an aptly named category. Analysis of purchase information might be necessary to identify such classes. Each one of the classes comprises a list of purchase items that, based upon analysis of historical data, define items frequently purchased together.

Col. 7 line 66 – Col. 8 line 1.

FIG. 4 is a representation of the data structure 80 that defines the classes. The data structure is referred to as the class definition file.

Col. 16 lines 62-66. The demographics prediction subsystem advantageously uses a customer population neural network that is designed to make predictions of the customers in the store and then to predict purchases that such a customer population would make.

Col. 17 lines 5-37. FIG. 18 is a representation of a demographics data structure 303 used by the CPU 18 (FIG. 1) in running the customer population neural network of the demographics prediction subsystem. ...

The first data field illustrated in the data structure 302 is for the time of day 304. Time of day can be important in predicting customer populations because, for example, buyers with particular characteristics might shop early in the day as opposed to those who shop late in the day or late in the evening. The next data field is for the date 306. The date field permits the system to account for seasonal buying characteristics, holiday variations, and other buyer characteristics associated with the day of the week, month, or year. A

320

weather data field 308 permits the system to further account for seasonal or other weather-related phenomenon. For example, rainy weather likely will result in a customer population favorably disposed to suggestions for purchases of rain gear such as boots, umbrellas, and overcoats, regardless of other purchases made during a store purchase transaction.

Another data field is one for customer data 310, which includes data relating to recent purchases by other customers, spending habits of the local population, economic data, and the like. The next data field is for buyer preference data 312, which comprises item identification numbers of products predicted to be purchased.

Col. 17 lines 51-55. Represented by the box numbered 324, is to process the collected data with the demographic neural network to generated output comprising a predicted customer population inside the store at a given time.

Claim 40, element c - my analysis of the Cragun '868 Patent

My analysis of this element is the same as my analysis for Claim 1, element c.

Claim 40, element d - language

- "Link the inferred event with an action to be performed during the sales process based on prior sales experience using the sales system, and"

Claim 40, element d - construction

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element d - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

The computer system 12 analyzes the collected purchase transaction information for a customer to segment the items purchased into purchase classes that comprise groups of items ordinarily purchased together. The system then uses neural networks to identify items that are missing from a purchase transaction that are members of a purchase class otherwise represented in the purchase transaction. The missing items can then be the subject of a purchase suggestion, an automatically dispensed coupon, or other sales promotion indicated by an output device 17 such as a printer or display terminal. In this way, the sales promotion selection system 10 automatically collects purchase transaction

321

CONFIDENTIAL

data, analyzes the data relating to a particular customer purchase transaction, and uses neural networks to select a sales promotion calculated to result in additional purchases. Col. 4 lines 11-27.

Claim 40, element d - my analysis of the Cragun '868 Patent

The Cragun '868 Patent does not perform this Claim element: "Link the inferred event with an action to be performed during the sales process based on prior sales experience using the sales system,

The Cragun '868 Patent does not describe events or an event management system – see Claim 1 b. The Cragun '868 Patent does not describe linking events to actions.

The '525 Patent suggests that any of a collection of learning technologies could be used in sales force automation systems. In the Cragun '868 Patent, the term *learning* occurs but only in conjunction with the neural network. The patent states:

"The artificial neural network used in this embodiment has a feed forward architecture using a back propagation learning algorithm. The details of such network construction will be understood by those skilled in the art without further explanation." [Cragon, 5:64-6:1]

"In this way, the system can learn and evolve." [Cragon, 7:2]

At the same time, it is clear from the Cragun '868 Patent that this learning occurs *within* one subsystem, as shown in Figure 17 and is not related to rules or inference.
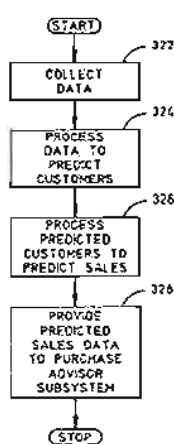

FIG. 19

"The next step, represented by the box numbered 324, is to process the collected data with the demographic neural network to generated output comprising a predicted customer population inside the store at a given time. Next, at box 326, the demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases." [Cragun, 17:51-58]

Claim 40, element e - language

- "Automatically initiate an operation using one or more of the plurality of subsystems to facilitate the action to be performed

322

CONFIDENTIAL

based on the inferred context."

Claim 40, element e - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element e - analysis by Dr. Cook of the Cragun '868 Patent

Dr. Cook's analysis of this element is as follows:

> The demographic prediction subsystem 25 provides the predicted sales purchase data to the purchase advisor subsystem and its neural networks. The purchase advisor subsystem will segment the purchase items into purchase classes and generate selected sales promotions, such as purchase suggestions. The selected sales promotions can be used on the general customer population or for direct mail campaigns and the like, rather than the use described previously of targeting particular customers making purchases.

> The output comprising the predicted customer population in the store and the output comprising the predicted purchase transactions can be used independently of any use in the purchase advisor subsystem.

> It might be useful to a store manager to have a sense of customers that can be expected in a store at anyone time, or to have an understanding of what products can reasonably be expected to be purchased at a given time of day. (Col. 17, line 60-col. 18, line 15).

> Col. 5 lines 42-49. For each class, the purchase items that fit within the class are processed through the neural network for that class to predict missing items that ordinarily are purchased in a transaction at the same time as the purchase items, as represented by the flow diagram box numbered 58 in FIG. 2. These additional items are suggested to the customer for purchase, as indicated by the flow diagram box numbered 60.
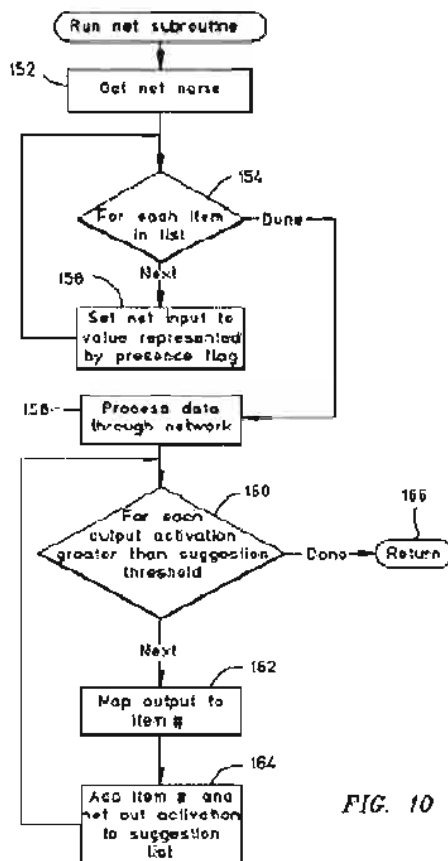
323

CONFIDENTIAL

FIG. 10

Col. 2, lines 56-59. The missing items can then be suggested by a sales clerk for purchase or can be the subject of an automatically produced promotion, such as a coupon that can be redeemed for a discounted purchase price.

Col. 18, lines 27-29. The system then selects a sales promotion to suggest the purchase of a missing item that likely will result in an additional sale.

Col. 17 lines 55-67. At box 326, the demographic subsystem processes the predicted customer population with another neural network of the subsystem to generate output comprising predicted purchases. That is, a listing of items that the subsystem predicts would be purchased by a typical customer at the given time.

The next step, represented by the flow diagram box numbered 328, is to provide the predicted sales purchase data to the purchase advisor subsystem and its neural networks. As described above, the purchase advisor subsystem will segment the purchase items into purchase classes and generate selected sales promotions, such as purchase suggestions.

Col. 18, line 2-6. The selected sales promotions can be used on the general customer population or for direct mail campaigns and the like, rather than the use described previously of targeting particular customers making purchases.

324

Claim 40, element e - my analysis of the Cragun '868 Patent

My analysis of this element is the same as my analysis for Claim 1, element d.

VI.F   U.S. PATENT NO. 4,947,028 TO GOROG (THE "GOROG '028 PATENT")

VI.F General Overview of the Gorog '028 Patent

Reference for the Gorog '028 Patent

- J. Gorog, "Automated Order and Payment System," US Patent 4,947,028, Filed: Jul. 19, 1988, Issued: Aug. 7, 1990

Claims at Issue

The Cook Report states that "Gorog U.S. Pat. No. 4,947,028 anticipates asserted Claims 1-3, 5-7, 20, 24, 34, and 40." (Cook Report, p265)

Dr. Cook's Summary of the Gorog '028 Patent (quoted from his Expert Report)

163. Gorog discloses the integration of existing devices, products, and networks to make the process of buying and selling merchandise significantly more efficient. The process of Gorog selects the merchant/supplier, confirms the availability of inventory to fulfill the sale, confirms the price, method of payment, and credit status of the consumer, as well as the delivery date and method of delivery.

164. An automated order and payment sales system, comprising a central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means. Software of an order computer terminal (OCT) acts as an event manager, and is coupled to remote device subsystems, including the various keypad, readers, display devices, and other peripheral equipment.

165. The OCT software detects a change in state when receiving an incoming order packet. The change of state is indicative of an event (i.e., that a valid and fulfillable order has been placed). Order packet data is divided into order data (i.e., information relating to the merchant, identification of the goods or services, and the amount of items desired) and payment data. Processing software infers the occurrence of a valid and fulfillable order, based upon records of inventories provided by participating businesses, or by sending a query to other computers holding the necessary data records for participating businesses, and by verifying payment mediums selected. Upon occurrence of the event, the software logically derives relevant contexts based upon the detected changes in state (i.e., receiving the incoming order packet). Contexts include inventory data and credit data, as described above.

166. Automatically initiated operations include transmission of order data and payment authorization information among the subsystems, and to product/service providers, all facilitating the action of completing and satisfying the order.

326

My Summary of the Gorog '028 Patent

The Gorog '028 Patent describes a pre-Web automated order and payment system consisting of a collection of Order Computer Terminals (OCTs) each connected to a central computer system (CCS). The Order Computer Terminals provide a customer the ability to order items using a credit card by optically scanning identification codes on items, using a keypad, or using voice for data entry. When an order is placed, the Central Computer System checks for product availability and customer credit, then verifies the order with the customer and the order is placed and payment is made. The Gorog '028 Patent notes: "the same process will be used for merchant to merchant ordering and sales transactions." [Gorog Patent, 1:18-20]

Dr. Cook's Analysis of the Gorog '028 Patent from his Expert Report pp. 36-37 (quoted)

162.   I considered and analyzed U.S. Patent No. 4,947,028 ("the '028 Patent"). The '028 Patent was "known or used by others" in the United States prior to the October 30, 1994 critical date for the '525 Patent.

163.   Gorog discloses the integration of existing devices, products, and networks to make the process of buying and selling merchandise significantly more efficient. The process of Gorog selects the merchant/supplier, confirms the availability of inventory to fulfill the sale, confirms the price, method of payment, and credit status of the consumer, as well as the delivery date and method of delivery.

164.   An automated order and payment sales system, comprising a central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means. Software of an order computer terminal (OCT) acts as an event manager, and is coupled to remote device subsystems, including the various keypad, readers, display devices, and other peripheral equipment.

165.   The OCT software detects a change in state when receiving an incoming order packet. The change of state is indicative of an event (i.e., that a valid and fulfillable order has been placed). Order packet data is divided into order data (i.e., information relating to the merchant, identification of the goods or services, and the amount of items desired) and payment data. Processing software infers the occurrence of a valid and fulfillable order, based upon records of inventories provided by participating businesses, or by sending a query to other computers holding the necessary data records for participating businesses, and by verifying payment mediums selected. Upon occurrence of the event, the software logically derives relevant contexts based upon the detected changes in state

327

(i.e., receiving the incoming order packet). Contexts include inventory data and credit data, as described above.

166.   Automatically initiated operations include transmission of order data and payment authorization information among the subsystems, and to product/service providers, all facilitating the action of completing and satisfying the order.

167.   The foregoing description is by way of example only and is intended to illustrate, in general terms, the functionality of the described system to provide context. As I discuss in the Claim chart, it is my opinion that under the Court's constructions, the asserted Claims 1-3, 5-7, 20, 24, 34, and 40 of the '525 Patent are anticipated by the '028 Patent under 35 U.S.C. § 102 (a) and (b). It is also my opinion that the remaining asserted Claims are obvious in view of the '028 Patent, either alone or in combination with other references herein.

168.   A detailed analysis of how this reference anticipates and/or renders obvious the asserted Claims of the '525 Patent is provided in Appendix C, pages 265-293.

Relevance of the Gorog '028 Patent to the '525 Patent

The objective of the Gorog '028 Patent is to automate a single task (placing an order) in the sales process.   Dr. Cook identifies the Order Computer Terminal as an event manager because it receiving events (orders) when the user inputs data.   Dr. Cook identifies that these events change the state of the computer. Dr. Cook states that:

> Processing software infers the occurrence of a valid and fulfillable order, based upon records of inventories provided by participating businesses, or by sending a query to other computers holding the necessary data records for participating businesses, and by verifying payment mediums selected. Upon occurrence of the event, the software logically derives relevant contexts based upon the detected changes in state (i.e., receiving the incoming order packet). Contexts include inventory data and credit data" [Dr. Cook Expert Report, paragraph 165]

Using this kind of analysis, any computer program that received inputs, assigns any variable thus changing its state, and uses any information (context) from another subcomponent to compute a result would invalidate the '525 Patent.

Instead, the '525 Patent concerns a flexible scheme for sharing information and rules across the subsystem boundaries of a system aimed at automating a sales force.   The Gorog '028 Patent reveals that the one sales subsystem uses conventional technology known in the prior art and is

328

not based on rules or inference and with no opportunity to take into account contextual events, rules or inference.

In summary, unlike the '525 Patent, the Gorog '028 Patent fails to provide an integrated sales force automation system consisting of a system of sales subsystems. It fully automates one narrow step in the sales process – removing the sales force from being involved. Its operation is not based on rules or inference. The Gorog '028 Patent does not mention *event, rule, inference,* or *context.*

In addition, the '028 Patent is similar to, and hence cumulative to, much of the prior art that was before the examiner during the prosecution of the '525 Patent. For example, the '028 Patent is cumulative to the following systems which, I understand, were developed by the assignee of the '525 Patent – Clear with Computers: (i) the ISIS System, which was of record during the prosecution of the '525 Patent; and (ii) the Truck Force Tools System which was of record during the prosecution of the '525 Patent. In addition, the '028 Patent is cumulative to a number of the United States Patents that were considered by the examiner during the prosecution of the '525 Patent.

VI.F. Claim 1 in view of the Gorog '028 Patent

Claim 1, preamble - language

- "A computer implemented sales system used to facilitate a sales process, the system comprising:"

Claim 1, preamble - construction

The Court has not construed this preamble. My analysis construes the terms of this preamble in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, preamble - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this preamble is as follows:

> The preamble is not a limitation, nonetheless col. 1 lines 10-13: "The originality of the invention lies in the integration of existing devices, products, and networks to accomplish a unique service which will making the process of buying and selling significantly more efficient."

> Col. 7 lines 39-43: "In summary, this process selects the merchant/supplier, confirms the availability of inventory to fulfill the sale, confirms the price, method of payment, and credit status of the consumer as well as the delivery date and method of delivery."

Claim 1, preamble - my analysis of the Gorog '028 Patent

The Court has not construed this preamble: "A computer implemented sales system used to facilitate a sales process, the system comprising:"

The Gorog '028 Patent describes "a sales system used to facilitate a sales process."

Claim 1, element a - language

- "a plurality of subsystems configured to facilitate one or more actions performed during at least one phase of the sales process; and"
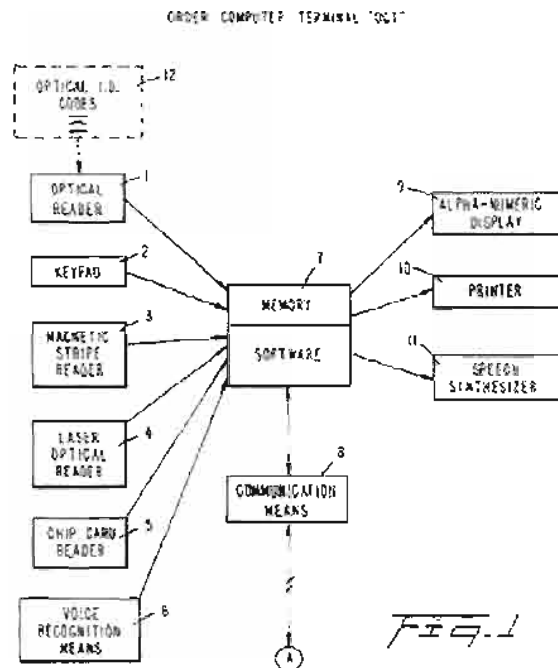
Claim 1, element a - construction

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

330

ORDER COMPUTER TERMINAL "OCT"

FIG. 1

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 1, element a - my analysis of the Gorog '028 Patent

The Gorog '028 Patent performs this Claim element: "a plurality of subsystems configured to facilitate one or more actions performed during at least one phase of the sales process;"

It does so for one small step in a sale force automation system: placing an order in the sales process.

331

CONFIDENTIAL

Claim 1, element b - language

- "an event manager, coupled to the subsystems, the event manager detecting one or more changes in state characteristic of an event occurring within the system,"

Claim 1, element b - construction

- "Subsystem" - "a system that is part of a larger system";

- "Event manager" - "hardware and/or software";

- "Changes in state characteristic of an event" - "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element b - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 6 lines 17-29: Referring to FIG. 3, the CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS.

> Col. 2 lines 46-50: "(a) A central computer system ("CCS") with a variety of programs, processing and storage capability and communications capabilities to allow input and output communications with order computer terminals."

> Col. 2 lines 61-68: "The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

> Col. 3 lines 1-8: "The CCS has various computer software programs that allow product/service order information to be accepted and transmitted from the central computer. Such software will also confirm or deny orders for products based upon records of inventories that have been provided by participating businesses or by sending a query to other computers holding the necessary data records for participating businesses."

332

Col. 9 lines 23-26: "A central data processing [event manager] means with communication capability [coupled to] adapted to receive information from a plurality of remote programmable data input/output means [subsystems] ..."

Reexamination col. 1 Line 68 – col. 2 lines 1-4: "said central data processor [event manager] comprising: ... means for receiving [detecting changes in state characteristic of an event] first [from optical reader] and second [from payment card reader] data..."

Claim 1, element b - my analysis of the Gorog '028 Patent

The Gorog '028 Patent does not perform this Claim element: "an event manager, coupled to the subsystems, the event manager detecting one or more changes in state characteristic of an event occurring within the system,"

The Gorog '028 Patent does not mention *event, rule, inference,* or *context.*

Dr. Cook identifies the Order Computer Terminal as an event manager because it receiving events (orders) when the user inputs data.

> 164. ... Software of an order computer terminal (OCT) acts as an event manager, and is coupled to remote device subsystems, including the various keypad, readers, display devices, and other peripheral equipment.
>
> 165.   The OCT software detects a change in state when receiving an incoming order packet. The change of state is indicative of an event (i.e., that a valid and fulfillable order has been placed)....

From this analysis, it appears that Dr. Cook believes that the user interface of the OCT terminal is an event manager because it accepts mouse and keyboard events (as graphical user interfaces do using tradition event-driven programming – see Section I.G).

The change of state the OCT terminal seems to accept is just the user entering the purchase.   This does not seem to be equivalent to the '525 Patent's event manager that is capable of integrating a collection of sales processes and that uses inference and rules. In my reading of the Gorog '028 Patent, I do not find a "hardware and/or software" subsystem that is coupled to the other subsystems and that "detecting one or more changes in state characteristic of an event occurring within the system" as described by the '525 Patent.

CONFIDENTIAL

Claim 1, element c - language

- "Inferring occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state, and"
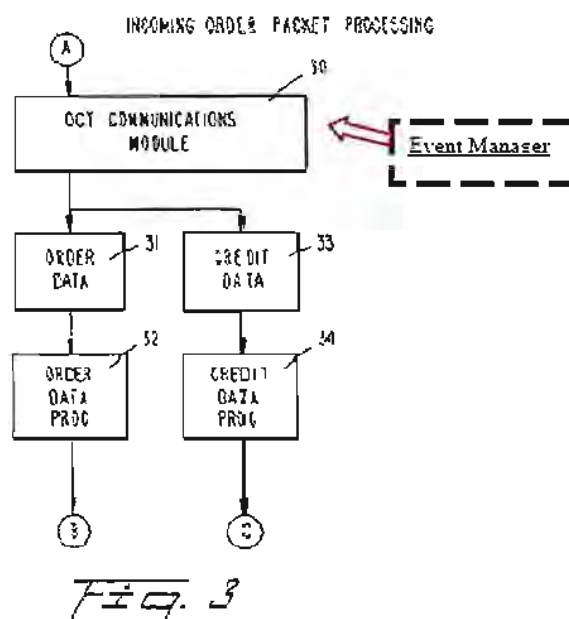
Claim 1, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element c - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

Fig. 3

334

Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS."

Reexamination col. 2 lines 1-17: "means for receiving... first and second data...order confirmation [inferring an event] means ... subsequent to receipt of payment authorization from the external database..."

Claim 1, element c - my analysis of the Gorog '028 Patent

The Gorog '028 Patent does not perform this Claim element: "Inferring occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state,"

The Gorog '028 Patent does not mention *event, rule, inference,* or *context.* The Gorog '028 Patent does not describe inferring occurrences of events or using a context mechanism. Whereas the '525 Patent concerns a flexible scheme for sharing information and rules across the subsystem boundaries of a system aimed at automating a sales force, the Gorog '028 Patent describes conventional technology for connecting subsystems in a system.

Claim 1, element d - language

* "automatically initiating an operation in one or more particular subsystems of the computer to facilitate a new action based on the inferred context."

Claim 1, element d - construction

* "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

* "Subsystem" - "a system that is part of a larger system";

* "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

335

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 1, element d - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

Reexamination col. 2 lines 18-23:   "means for transmitting at least the first data and the payment authorization information to a product/service provider in accordance with the first data, in response to receipt by the central data processor of an order confirmation message from the remote terminal"

Claim 1, element d - my analysis of the Gorog '028 Patent

The Gorog '028 Patent does not perform this Claim element: "automatically initiating an operation in one or more particular subsystems of the computer to facilitate a new action based on the inferred context."

As described in Claim 1, element d, the Gorog '028 Patent does not describe an inference procedure nor a mechanism like contexts.

VI.F. Claim 2 in view of the Gorog '028 Patent

Claim 2 - language

- "[A system as recited in claim 1,] wherein the inferred context includes information related to at least one phase of the sales process."

Claim 2 - construction

- "context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

336

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 2 - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> [Claim 1 chart incorporated by reference]
>
> Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS." Reexamination col. 2 lines 1-17:
>
> Reexamination col. 2 lines 1-17: "means for receiving... first and second data...order confirmation [inferring an event] means ... subsequent to receipt of payment authorization from the external database..."

Claim 2 - my analysis of the Gorog '028 Patent

> See claim elements missing from Claim 1.

The Gorog '028 Patent does not perform this claim element: "wherein the inferred context includes information related to at least one phase of the sales process."

Among other things, while it is clear that, in the Gorog '228 Patent, information relevant to a sales transaction (e.g., customer and product identification) is passed between the remote OCT terminal and the central CCS computer (in a conventional manner), there is no evidence from the Cook Report or the Gorog '228 Patent that "context" ["information already existing

337

within the system that becomes relevant upon the occurrence of an event"] was *inferred* using a "logical process by which a factual conclusion is derived from known facts by the application of logical rules". The Gorog '028 Patent does not describe an event manager that "detect[s] . . . infer[s] . . . and automatically initiat[es] an operation" as required by Claim 1 or that any inference step that is part of an event takes place.

VI.F. Claim 3 in view of the Gorog '028 Patent

Claim 3 - language

- "[A system as recited in claim 1,] wherein the inferred context includes information related to whether a previous event has occurred in the sales process.

Claim 3 - construction

- "context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 3 - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer

338

sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS." Reexamination col. 2 lines 1-17:

Reexamination col. 2 lines 1-17: "means for receiving... first and second data...order confirmation [inferring an event] means ... subsequent to receipt of payment authorization from the external database..."

Claim 3 - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 1.

The Gorog '028 Patent does not perform this claim element: "wherein the inferred context includes information related to whether a previous event has occurred in the sales process."

Among other things, while it is clear that, in the Gorog '228 Patent, information relevant to a sales transaction (e.g., customer and product identification) is passed between the remote OCT terminal and the central CCS computer and, in a later step, back again for order confirmation (in a conventional manner), there is no evidence from the Cook Report or the Gorog '228 Patent that "context" ["information already existing within the system that becomes relevant upon the occurrence of an event"] was *inferred* using a "logical process by which a factual conclusion is derived from known facts by the application of logical rules". The Gorog '028 Patent does not describe an event manager that "detect[s] . . . infer[s] . . . and automatically initiat[es] an operation" as required by Claim 1 or that any inference step that is part of an event takes place.

VI.F. Claim 5 in view of the Gorog '028 Patent

Claim 5, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 5, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 5, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 5, element a - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 1.

The Gorog '028 Patent performs (some of) the function of the '525 Patent's time with customer subsystem:

340

CONFIDENTIAL

"the time with customer component receives necessary information, for example, pricing and financing data from the data component, and stores information obtained during the time spent with the customer, such as the customer's particular needs and desires in the databases of the data component 116." ['525 Patent, 5:24-30]

However, there is a presumption in the '525 Patent that the system is aiding a salesperson who is part of a sales force. For instance,

"while the salesperson is using the time with customer component 104" ['525 Patent, 11:32-33]

In the Gorog '028 Patent, there is no salesperson.

Furthermore, this claim element requires a lead, but, in the Gorog '028 Patent, consumers who choose to use the system themselves cannot properly be called leads.

Claim 5, element b - language

- "a lead generation subsystem configured to convert a name to a potential customer."

Claim 5, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 5, element b - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

341

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 5, element b - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 1.

The Gorog '028 Patent does not perform the claim element: "a lead generation subsystem configured to convert a name to a potential customer."

Among other things, the Gorog '028 Patent does not contain a lead generation subsystem.

The '525 Patent describes a lead generation subsystem as follows

"The lead generation component 102 is provided to assist sales personnel to identify leads, to generate qualified leads and to begin the sales process. The lead generation component may include, for example, automated systems designed to assist the sales personnel in carrying out such tasks as telemarketing, kiosk presentations, trade show demonstrations, database marketing, electronic advertising, etc. ['525 Patent, 4:22-27]

Consumers from the general public who choose to use the system themselves cannot properly be called leads.

VI.F. Claim 6 in view of the Gorog '028 Patent

Claim 6, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 6, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

342

Claim 6, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> [Claim 1 chart incorporated by reference]

> Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

> The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

> Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 6, element a - my analysis of the Gorog '028 Patent

> See claim elements missing from Claim 1.

> See discussion for Claim 5a which is incorporated herein by reference.

Claim 6, element b - language

- "an order management subsystem configured to convert the sale such that a product or service delivered matches a product or service sold."

Claim 6, element b - construction

- "subsystem" - "a system that is part of a larger system"

> My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 6, element b - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

343

CONFIDENTIAL

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 6, element b - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 1.

The Gorog '028 Patent does not perform the claim element: "an order management subsystem configured to convert the sale such that a product or service delivered matches a product or service sold."

Among other things, the Gorog '028 Patent does not contain an order management subsystem. The '525 Patent describes an order management subsystem as follows

> "The order management component 106 assists sales personnel in efficiently managing the critical sales process phase that encompasses the time between the purchase decision and the time the product or service is delivered. For some products or services, this could be a short period of time, while for others it may be many months or even years. The order management component 106 allows the sales personnel to electronically manage changes and provide needed information to the customer during this critical time." ['525 Patent, 5:31-39]

The Gorog '028 Patent aids in making a sale but provides no description of after-sale follow-up.

Furthermore, there is a presumption in the '525 Patent that the system is aiding a salesperson who is part of a sales force. In the Gorog '028 Patent, there is no salesperson.

344

VI.F. Claim 7 in view of the Gorog '028 Patent

Claim 7, element a - language

- "[A system as recited in claim 1, wherein the plurality of subsystems comprises:] a time with customer subsystem configured to convert a lead to a buying customer, so as to close a sale; and"

Claim 7, element a - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 7, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 1 chart incorporated by reference]

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 7, element a - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 1.

See discussion for Claim 5a which is incorporated herein by reference.

345

Claim 7, element b - language

- "a customer retention subsystem configured to convert an existing customer into a lead, so as to generate repeat sales."

Claim 7, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 7, element b - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

> The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

> Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 7, element b - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 1.

The Gorog '028 Patent does not perform the claim element: "a customer retention

subsystem configured to convert an existing customer into a lead, so as to generate repeat sales."

Among other things, the Gorog '028 Patent does not contain a customer retention

subsystem. The '525 Patent describes a customer retention subsystem as follows

> "A further core process component of preferred system 100 is the customer retention component 108. This component assists sales personnel during the phase of the sales process after delivery of the service or product purchased by the customer. Component

346

100 assists sales personnel in retaining a customer; this is accomplished through processes that ensure a customer remains satisfied with the purchase decision and that increase repeat sales opportunities." ['525 Patent, 5:65-6:5]

Furthermore, this claim element requires a lead, but in the Gorog '028 Patent, consumers who choose to use the system themselves cannot properly be called leads.

VI.F. Claim 20 in view of the Gorog '028 Patent

Claim 20, preamble - language

- "A method of facilitating a sales process using a computer arrangement having a plurality of subsystems configured to facilitate one or more actions performed during at least one phase of the sales process, the method comprising the steps of:"

Claim 20, preamble - construction

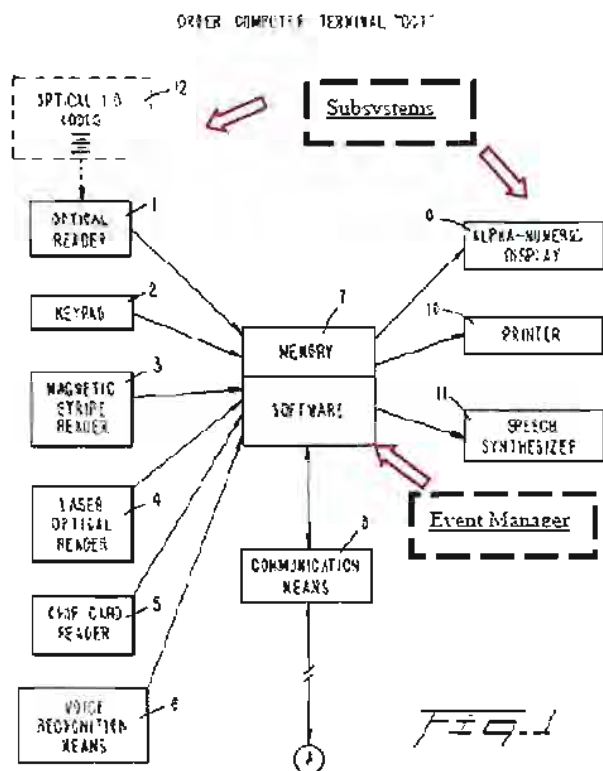- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 20, preamble - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this preamble is as follows:

> The preamble is not a limitation, nonetheless col. 1 lines 10-13: "The originality of the invention lies in the integration of existing devices, products, and networks to accomplish a unique service which will making the process of buying and selling significantly more efficient."

> Col. 7 lines 39-43: "In summary, this process selects the merchant/supplier, confirms the availability of inventory to fulfill the sale, confirms the price, method of payment, and credit status of the consumer as well as the delivery date and method of delivery."

347

FIG. 1

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 20, preamble - my analysis of the Gorog '028 Patent

My analysis of the preamble for this method Claim is the same as my analysis for the preamble and Claim 1, element a combined.

348

Claim 20, element a - language

- "automatically detecting one or more changes in state characteristic of an event occurring in the sales process;"

Claim 20, element a - construction

- "Changes in state characteristic of an event" - "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system.

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 20, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 6 lines 17-29: Referring to FIG. 3, the CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS.

> Col. 2 lines 46-50: "(a) A central computer system ("CCS") with a variety of programs, processing and storage capability and communications capabilities to allow input and output communications with order computer terminals."

> Col. 2 lines 61-68: "The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

> Col. 3 lines 1-8: "The CCS has various computer software programs that allow product/service order information to be accepted and transmitted from the central computer. Such software will also confirm or deny orders for products based upon records of inventories that have been provided by participating businesses or by sending a query to other computers holding the necessary data records for participating businesses."

Col. 9 lines 23-26: "A central data processing [event manager] means with communication capability [coupled to] adapted to receive information from a plurality of remote programmable data input/output means [subsystems] ..."

Reexamination col. 1 Line 68 – col. 2 lines 1-4: "said central data processor [event manager] comprising: ... means for receiving [detecting changes in state characteristic of an event] first [from optical reader] and second [from payment card reader] data..."

Claim 20, element a - my analysis of the Gorog '028 Patent

The material differences between this element and the "detecting" of Claim 1, element b are that Claim 20 has the additional limitation of "automatically" detecting, and it involves detecting state changes in events occurring in the sales process, as opposed to Claim 1 which involves detecting state changes of events occurring in the system.

My analysis of this element is the same as my analysis for Claim 1, element b.

Claim 20, element b - language

- "Inferring occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state; and"

Claim 20, element b - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

350

Claim 20, element b - analysis by Dr. Cook of the Gorog '028 Patent

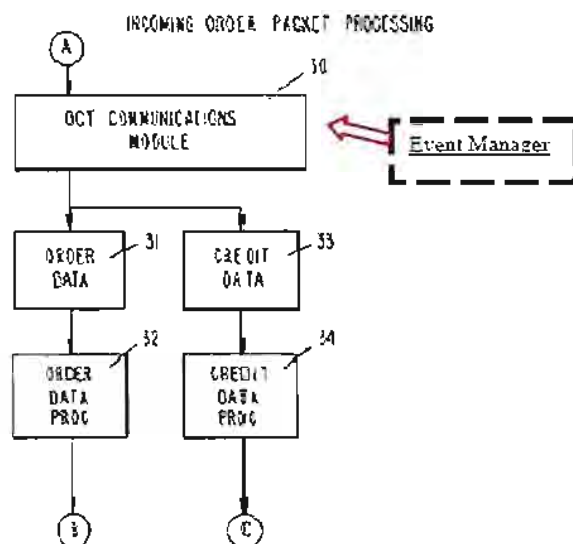Dr. Cook's analysis of this element is as follows:

Fig. 3

Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS."

Reexamination col. 2 lines 1-17: "means for receiving… first and second data…order confirmation [inferring an event] means … subsequent to receipt of payment authorization from the external database…"

Claim 20, element b - my analysis of the Gorog '028 Patent

My analysis of this element for this method Claim is the same as my analysis for system Claim 1, element c.

Claim 20, element c - language

- "automatically initiating an operation in one or more particular subsystems of the computer to facilitate a new action based on the inferred context."

351

Claim 20, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Subsystem" - "a system that is part of a larger system";

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 20, element c - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> Reexamination col. 2 lines 18-23: "means for transmitting at least the first data and the payment authorization information to a product/service provider in accordance with the first data, in response to receipt by the central data processor of an order confirmation message from the remote terminal"

Claim 20, element c - my analysis of the Gorog '028 Patent

My analysis of this element is the same as my analysis for Claim 1, element d.

VI.F. Claim 24 in view of the Gorog '028 Patent

Claim 24 - language

- "A method as recited in claim 20, wherein the inferred context includes information related to at least one phase of the sales process."

Claim 24 - construction

- "context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 24 - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> [Claim 20 chart incorporated by reference]
>
> Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS."
>
> Reexamination col. 2 lines 1-17: "means for receiving… first and second data…order confirmation [inferring an event] means … subsequent to receipt of payment authorization from the external database…"

Claim 24 - my analysis of the Gorog '028 Patent

> See claim elements missing from Claim 20.
>
> See discussion for Claim 2 which is incorporated herein by reference.

VI.F. Claim 34 in view of the Gorog '028 Patent

Claim 34, element a - language

- "[A method as recited in claim 20, further comprising the steps of:] inferring occurrence of an event while converting a lead to a buying customer; and"

Claim 34, element a - construction

- "inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 34, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

[Claim 20 chart incorporated by reference]

Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS."

Reexamination col. 2 lines 1-17: "means for receiving... first and second data...order confirmation [inferring an event] means ... subsequent to receipt of payment authorization from the external database..."

Claim 34, element a - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 20.

See discussion for Claims 2 and 5b which are incorporated herein by reference. In Gorog '028, there is no event described that converts a lead from a lead generation subsystem to become a buying customer which involves the time with customer subsystem.

Indeed, there is no lead since the customer himself chooses to use the OCT terminal.

354

Claim 34, element b - language

- "using the particular subsystem to convert an existing customer into a lead, so as to generate repeat sales."

Claim 34, element b - construction

- "subsystem" - "a system that is part of a larger system"

My analysis construes the other terms of this element in accordance with their ordinary

and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 34, element b - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

> The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

> Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 34, element b - my analysis of the Gorog '028 Patent

See claim elements missing from Claim 20.

The Gorog '028 Patent does not perform this claim element: "using the particular

subsystem to convert an existing customer into a lead, so as to generate repeat sales."

Among other things, there is no description in the Gorog '028 Patent of using this system

for converting existing customers into future leads to generate repeat sales.

355

VI.F. Claim 40 in view of the Gorog '028 Patent

Claim 40, preamble - language

- "A computer implemented sales system used to facilitate a sales process, the system comprising:"

Claim 40, preamble - construction

The Court has not construed this preamble. My analysis construes the terms of this preamble in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, preamble - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this preamble is as follows:

> The preamble is not a limitation, nonetheless col. 1 lines 10-13: "The originality of the invention lies in the integration of existing devices, products, and networks to accomplish a unique service which will making the process of buying and selling significantly more efficient."

> Col. 7 lines 39-43: "In summary, this process selects the merchant/supplier, confirms the availability of inventory to fulfill the sale, confirms the price, method of payment, and credit status of the consumer as well as the delivery date and method of delivery."

Claim 40, preamble - my analysis of the Gorog '028 Patent

My analysis of this preamble is the same as my analysis for Claim 1, preamble.

Claim 40, element a - language

- "a plurality of subsystems configured to electronically facilitate actions performed during the sales process; and"
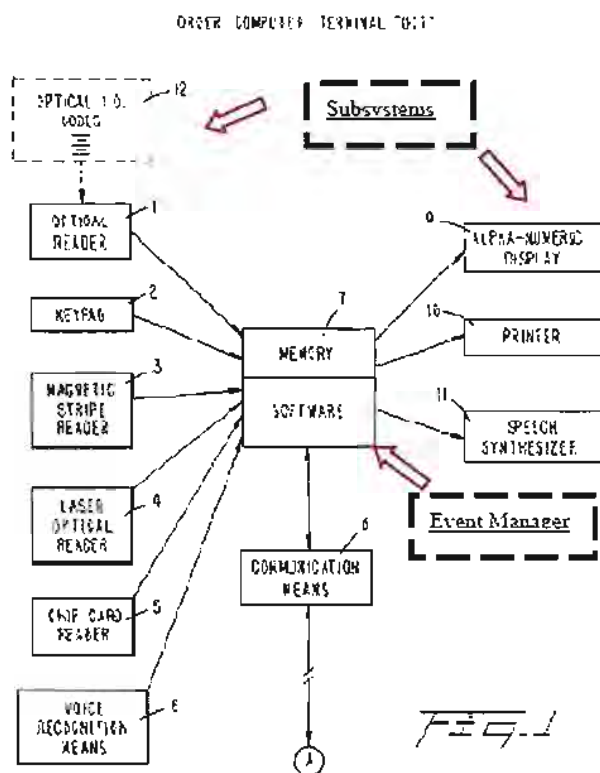
Claim 40, element a - construction

- "Subsystem" - "a system that is part of a larger system";

356

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element a - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

Col. 2 lines 54-68: "(c) A order computer terminal ("OCT") with means to input data orally, optically, magnetically, electronically, and manually having associated order processing software and communications capabilities allowing receipt of communications from the CCS and further providing output communications to the CCS.

The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

Col. 9 lines 8-30: "An automated order and payment [sales] system, which comprises: ... A central data processing means with communication capability adapted to receive information from a plurality of remote programmable data input/output means..."

Claim 40, element a - my analysis of the Gorog '028 Patent

My analysis of this element is the same as my analysis for Claim 1, element a.

Claim 40, element b - language

- "an event manager coupled to the subsystems and configured to detect one or more changes in state characteristic of an event occurring in the system,"

Claim 40, element b - construction

- "Event manager" - "hardware and/or software";

- "Subsystem" - "a system that is part of a larger system";

- "Changes in state characteristic of an event" - "a change in a unique configuration of information within the system that is indicative of the occurrence of an event within the system.

My analysis construes the other terms of this element in accordance with their ordinary and

customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element b - analysis by Dr. Cook of the Gorog '028 Patent

Dr. Cook's analysis of this element is as follows:

> Col. 6 lines 17-29: Referring to FIG. 3, the CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS.

> Col. 2 lines 46-50: "(a) A central computer system ("CCS") with a variety of programs, processing and storage capability and communications capabilities to allow input and output communications with order computer terminals."

> Col. 2 lines 61-68: "The CCS can send data to or receive data from the OCT's or from other computer systems, for the purpose of accepting data transmitted from such terminals or other computers over normal telephone lines, radio, television, satellite, or any other signals from remote locations to the CCS. The CCS can also communicate with other computers using accepted industry protocols."

358

Col. 3 lines 1-8: "The CCS has various computer software programs that allow product/service order information to be accepted and transmitted from the central computer. Such software will also confirm or deny orders for products based upon records of inventories that have been provided by participating businesses or by sending a query to other computers holding the necessary data records for participating businesses."

Col. 9 lines 23-26: "A central data processing [event manager] means with communication capability [coupled to] adapted to receive information from a plurality of remote programmable data input/output means [subsystems] ..."

Reexamination col. 1 Line 68 – col. 2 lines 1-4: "said central data processor [event manager] comprising: ... means for receiving [detecting changes in state characteristic of an event] first [from optical reader] and second [from payment card reader] data..."

Claim 40, element b - my analysis of the Gorog '028 Patent

My analysis of this element is the same as my analysis for Claim 1, element b.

Claim 40, element c - language

- "Infer occurrence of the event and a context in which the event occurred based at least in part on the detected changes in state,"

Claim 40, element c - construction

- "Context" - "information already existing within the system that becomes relevant upon the occurrence of an event";

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

- "Inferring . . . a context in which the event occurred" - "logical process by which the fact that information already existing within the system that becomes relevant upon the occurrence of an event is derived by application of logical rules";

- "Inferring occurrence of an event" - "logical process by which the fact that an event has occurred is derived by application of logical rules";

My analysis construes the other terms of this element in accordance with their ordinary and customary meaning to one of ordinary skill in the art during the time frame of October 1995.

Claim 40, element c - analysis by Dr. Cook of the Gorog '028 Patent

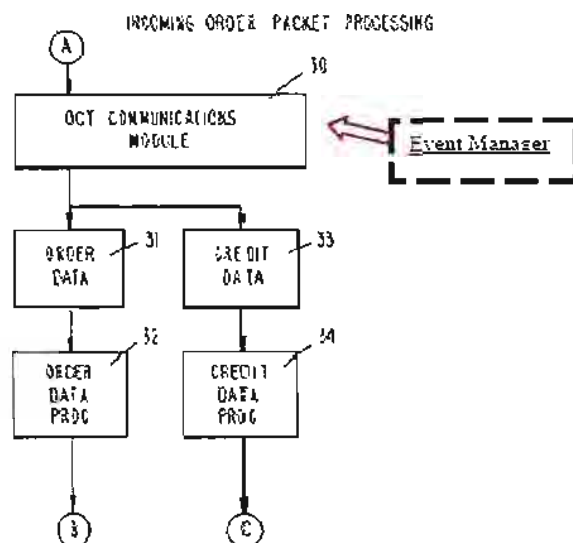Dr. Cook's analysis of this element is as follows:

359

Fig. 3

Col. 6 lines 37-51: "[T]he CCS receives the order packets over a variety of transmission media (e.g., telephone line, optical fiber transmission lines, satellite data link) from OCTs via the OCT communications module [30]. This module contains the hardware and software necessary to receive order and credit information from OCTs when a consumer sends such information. The incoming order packet process causes the order packet data to be divided into order data [31] that is, the information relating to the merchant, identification of the goods or services, and the amount of items desired. This information then is subjected to the order data processing software [32] of the CCS."

Reexamination col. 2 lines 1-17: "means for receiving… first and second data…order confirmation [inferring an event] means … subsequent to receipt of payment authorization from the external database…"

Claim 40, element c - my analysis of the Gorog '028 Patent

My analysis of this element is the same as my analysis for Claim 1, element c.

Claim 40, element d - language

- "Link the inferred event with an action to be performed during the sales process based on prior sales experience using the sales system, and"

Claim 40, element d - construction

- "Inferring" - "logical process by which a factual conclusion is derived from known facts by the application of logical rules";

360